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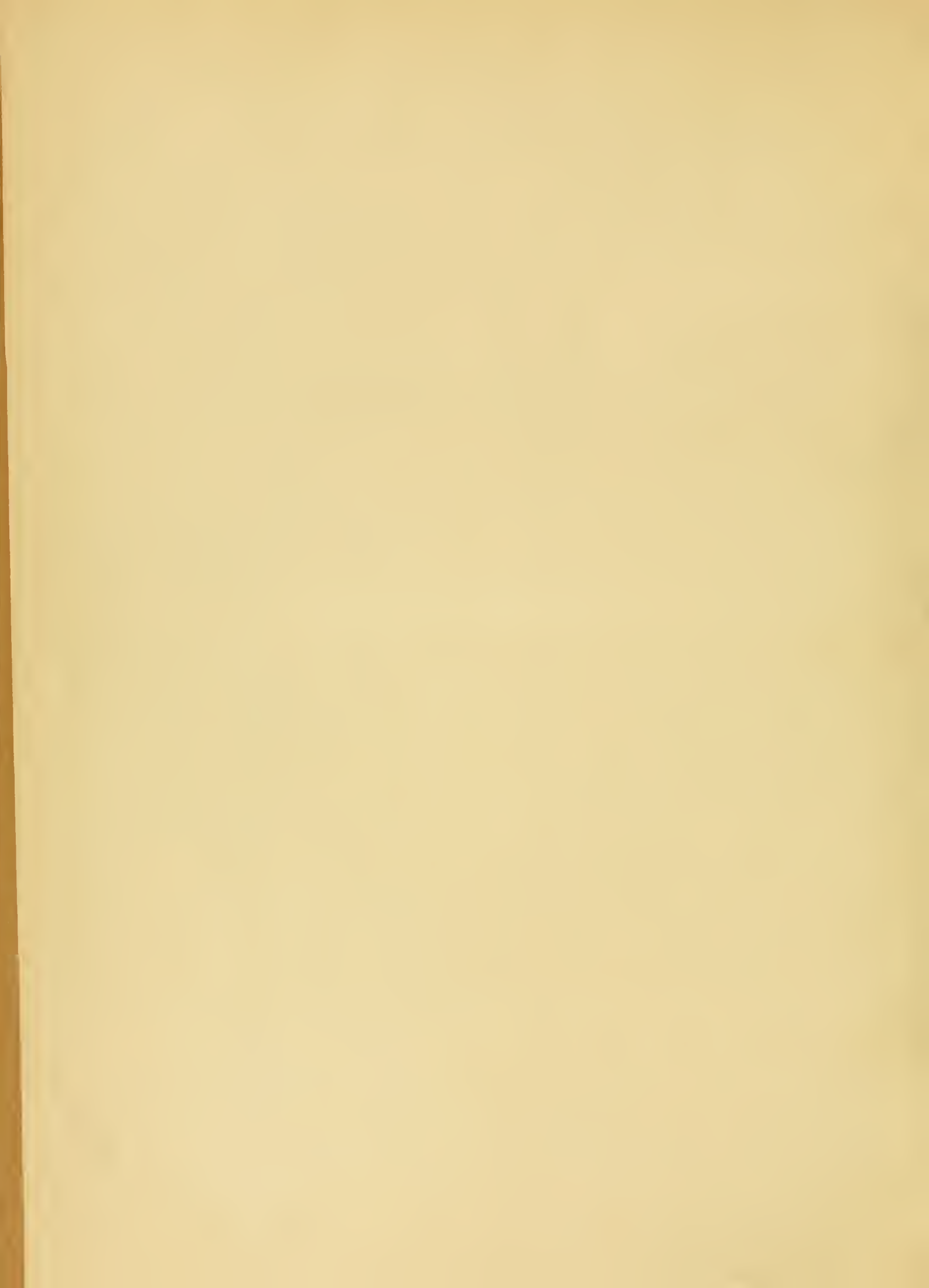






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THE
AMERICAN
AGRICULTURIST.

FOR THE
Farm, Garden, and Household.

“Agriculture is the most Healthful, the most Useful, the most Noble Employment of Man.”—WASHINGTON.

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The stars (*) in the following Index show where engravings occur, and the prefixed figures the number in the article. Articles referring directly or indirectly to Bees, Cattle, Insects, Manures, Trees, Weeds, etc., will be found indexed under these general heads.

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NEW SERIES—No. 228.



THE "AUBURN HORSE."—THE PROPERTY OF ROBERT BONNER, ESQ.—Engraved for the American Agriculturist.

Last spring there was a large spirited chestnut horse at work, hauling lumber for some oil wells in Susquehanna Co., Pa. He was famous for the ease and power with which he worked, laying out his strength with almost magic effect. This horse was bred by Philip Smelzer, of Lodi, Seneca Co., N. Y. His dam is out of a Vermont Hamiltonian mare by a Bellfounder horse; and his sire is by the well-bred horse "Champion," a great-grandson of imported Messenger. He was foaled in April '58, hence is 7 years old. He is over 16 hands high and in color, is golden chestnut. At 2 years old, he was sold for a price stated as \$400. Mr. Parsons, of Auburn, seeing his fine points, and knowing that he had trotted quite fast, bought him last May for \$550. After some training, and after he had shown great power and speed, he sold him to Mr.

Robert Bonner, publisher of The N. Y. Ledger, a most enthusiastic lover of a fast horse, for the modest sum of \$13,000. A monstrous price for a gelding; but if any one thinks Mr. Bonner repents his bargain, we can assure him of his mistake. It would be useless to offer Mr. B. thrice the price. The "AUBURN HORSE" affords his owner intense pleasure, when he escapes from the confinement of his business, and he loves him as a friend. He is confident that he might win with him every trotting purse that is put up, and get his money back in his bets, over and over again; but Mr. Bonner *never bets*, and never lets his horses trot for money. The famous trotters *Lantern*, *Lady Palmer*, and her mate, *Flatbush Maid*, the beautiful grey mare, *Peerless*, and several others, are owned by the same liberal and high-minded gentleman.

The Auburn Horse in Mr. Bonner's hands has the advantages of the best training and care, and his *private* performances satisfy his owner and our best judges that he is the fastest trotting horse in the world. His best public performance was, since coming to New York, when, being driven by Mr. B., to a road wagon, (wagon and driver weighing 325 lbs.), he trotted a mile in 2 minutes, 29 seconds.

A glance at his great muscles and faultless bone, the feeling of his iron sinews, and hard flesh, free from fat and in the right place, will convince any one of the immense power of the animal. His clean limbs, slender neck, bony head and fine eyes are very thoroughbred in their look. He is almost a perfect model of power and speed, and will surely astonish the world one of these days by his trotting feats.

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AMERICAN AGRICULTURIST.

NEW-YORK, JANUARY, 1866.

As we divide time, we are now on the threshold of a New Year, one of those times when men instinctively look forward to what time has in store for them and for the world, and, as man can only judge the future by the past, we look back also. To us, of this nation, the future, bright with hope, opening the most abundant rewards for peaceful industry, contrasts so happily with the year just past, in its beginning, that we hardly dare believe that Peace has come, and that our great Nation is to start anew in its career of progress in the arts of peace. Agriculture is an art of many arts;—what science does it not employ, and what art does not work to its advantage? If we are wide-awake to learn and to apply as well as to invent and to discover, we shall be no laggards in this race of progress. Terrible have been our sacrifices,—grand has been the hopeful fortitude of the nation, and with virtue and faithfulness to our high trusts, great will be the reward.

Farmers will give more and better thought now to their farms, and with this will come greater prosperity. Winter may stop *hand-work*, but it cannot stop *head-work*, and they both yield equally valuable results. Planning for the future, laying out improvements, and looking ahead in sundry ways should not only occupy the mind these January days and evenings, but such plans and good ideas should go, straightway, down upon paper. This avoids dreaming over the same things day after day, and makes thinking of much more avail.—It is like harrowing in the seed. This reminds us of an excellent style of a ready reference, scrap- and memorandum-book which we will describe in "*the Basket*."

Hints about Work.

The frugal legislators of some of the States (Connecticut in particular) are said to have placed the time of holding the annual sessions of the legislature in May, because as most of the members were farmers, there would be a guaranty against long sessions, in the pressing necessity for them to return to their farms to put in their crops; but when the effort was made to change the time to the winter months, the law makers, no longer so frugal of the people's money, argued that winter work upon the farm needed more the vigilant eye of the master than that of any other season. So indeed it does; spring is the seed-time, but winter is the golden fruition,—more than any other, the ripening time of the farmer's year's toil, when beef, mutton and pork, corn and wheat, are most readily converted into greenbacks. To promote this end

Animals of all kinds need constant care. We subject them to unnatural influences of food and confinement, and should see to it that the natural laws of health are not violated, that they are all clean, have pure air, light, exercise, good feed and water. The curry comb and card cannot be recommended for use on sheep and poultry, but all the other live stock of the farm will be benefited by their frequent employment. Try carding the calves and colts regularly, and mark their improved appearance; and the animals which more than any others fairly speak their gratitude for a currying are

Swine, whose thrift and good growth will also be greatly promoted by extraordinary cleanliness. Arrange this month for the farrowing of sows about the first of May. During her sixteen weeks of gestation a sow should have a clean and comfortable sty, be supplied with abundant litter and with succulent and rather bulky feed, in preference to grain, or nutriment in a concentrated form. An excellent diet is potatoes, and other roots, apples, pumpkins, etc., with oats, bran, or corn meal, in small quantity, all boiled together.

Sheep.—If so situated that you can watch the market and take advantage of its fluctuations, crowd the fattening sheep as fast as possible, so as to have them fat and ready for market in ease snows or other causes cut off the supply by rail. If the ob-

ject be to consume fodder and 'make manure, feed more deliberately—giving more freedom and exercise. Lambs need the best quality of hay, some roots, a little grain, and access to straw, or they may fall off in condition. When sheep have no roots or similar food, keep them supplied with hemlock or pine boughs, and if convenient, give them the range of a piece of woodland, where timber has been felled.

Young Stock.—One great means of having fine stock is bestowing attention and good care on them while growing. All kinds, especially colts and calves, should be kept rapidly growing, and never lack pure water. Probably three quarters of the young stock of the country nearly or quite stop in their growth during several weeks, each winter.

Calves and Yearlings should always be separated from large cattle, and receive more nutritious feed than store animals or dry cows require. Half a pound of oil-cake meal per head (soaked or scalded in much water, and sprinkled over the fodder,) will promote health and thrift.

Colts will thrive well on one quart of oats each, daily, with a good supply of bright straw or two pounds of hay. The same quantity fed as cut-feed, the oats being ground, will be much better for them.

Horses.—Curry or card all whether worked or not, if you would keep them in good health, and give all not worked daily an hour or two for exercise, turning them loose, one at a time, lest in their play they kick each other. Do not expose brood mares to danger of falling in slippery weather; bring water to them, or keep them calked, and so too,

Oxen used on slippery roads should be kept well shod, both for their comfort and their owner's security. Large bodied oxen often get a bad habit of crowding by being worked in short yokes and going in narrow sled tracks. The remedy for this difficulty is to make the sleds to run wider and the yokes longer. Long yokes alone will not cure it.

Milk Cows should not be milked too close upon their time of calving. If dried off within five weeks, it is well enough for both cow and calf. Cows not giving milk do not need so good feed, but should be stabled if possible, and fed good hay and stalks, which if chaffed and wet up with a little bran, corn meal or oil cake will go much farther. The fact is, farmers generally pay too little attention to properly economizing

Fodder of all kinds. It ought never to be fed upon the ground—the waste will pay for good racks in one season. Fodder goes farther and is consumed to better advantage when hay, straw, cornstalks, with a suitable allowance of roots or grain are fed daily, at different feedings or mixed more or less, than when the animals are confined for days or weeks to one kind of coarse fodder. One of the most economical ways to feed

Oats is to thresh off about two-thirds of the grain and feed the straw with the remainder to sheep and cattle. It will be found nearly equal to good hay.

Grain.—It is poor economy to feed any kind of grain whole or uncooked, to any stock except sheep. They do their own corn-grinding to advantage, except when being rapidly fattened. If whole corn be fed, pour boiling water over it and let it stand twelve hours; and if boiled half an hour after that, it is all the better. A strange but general prejudice exists among many old-school farmers not only against feeding grain, but against feeding

Roots: their extended culture and free use will pay, not only in introducing a better system of farming, but in the better health and condition of the stock, and in maintaining them and fattening them at less cost. Look to it that roots do not freeze. If in pits or heaps, where the earth has caved in or been washed away, patch such spots with strawy manure, or earth. Sliced or mashed they may be fed to all kinds of stock, from chickens to horses, in large or small quantities to advantage, if only with regularity. Another very generally neglected but excellent article of feed is

Oil cake or Oil meal.—This, as our readers know, is the residue after pressing out the oil from linseed and is properly called linseed oil-cake, (or

meal, if ground,) to distinguish it from cotton-seed oil-cake, hemp-seed oil-cake, etc., which are sometimes in our market. Oil-cake is worth nearly all it costs as manure, and this value it does not lose by being fed. The daily feed for a sheep is about half a pound; for a calf, a pound or more, and for neat cattle and horses, from one to five pounds, according to their other feed and the demands made upon them for labor or milk.

Manure is one of chief sources of profit in keeping stock. That of horses and cattle ought generally to be mixed and laid up in compact heaps under sheds where the leachings can be pumped over it. Otherwise scatter it evenly about the yard which is floored with a deep layer of muck. No water should ever flow in or out of a barn-yard, but if, in severe storms or thaws, water does flow out, conduct it over adjacent fields.

Bones are worth as manure from $\frac{1}{2}$ c. to 2 c. per pound to almost every farmer. To save them from the dogs, have a hoghead set where they may be conveniently thrown. Save also

Ashes for fertilizing purposes, but never allow them to be moved in wooden vessels from stoves or fire places, nor to be kept in wood near any wooden building or fence even, for there is nothing for which a farmer should be more solicitous than the

Safety of Buildings against Fire.—To secure this, examine chimneys and flues, for places where smoke may escape, and be sure that sparks cannot. Be constantly careful of combustible bodies, and of lights. Allow no smoking, or uncovered lights in or near the barns.

Snow in heavy masses should not be left on any roofs; the tendency is to spread them out and weaken the walls. Besides, it is apt to thaw and freeze in spots, and especially is it likely to remain frozen near the plates and eaves, while the warm air beneath thaws it over the rest of the roof, and so ice dams are formed which cause the water to back up between the shingles and flow through the roof. During

Thaws prevent snow water behind the drifts, etc., flowing through foundations and into cellars. If the snow goes off and the ground is open, much may be thrown out, swamp ditching may be pushed ahead, and

Meadows may be improved by clearing away stumps, stones, etc., (which may often be done by blasting); knolls may be leveled down, and if not too wet, some "hand dressings" applied, as ashes, bone dust, plaster, and grass and clover seed may be sowed. Should the frost come out of the ground nearly or entirely

Draining may be done so long as the weather continues open, and

Fences may be removed, renewed, or new ones built even if post holes are to be dug, much more economically than in the growing season. Fence timber is better cut in the summer; winter is the time to work it up, but

Fire Wood should be cut in winter when the sap is not in it, as it dries faster and burns better. Secure a full supply and haul it in when the sledging is good. Touching the

Filling of Ice houses, Stables, Breaking Colts and Steers, Horse Shoes and Calks, and sundry other subjects appropriate to the season, items of interest will be found in the "Basket."

Work in the Horticultural Departments.

Were it not that many new readers come with the new volume, we might briefly refer to the notes of last month for suggestions of this. To our new friends we would say, that these notes are intended as useful reminders of what to do during the current month. They are, however, of that flexible character which often allows them to reach over both ways, and they generally include that which might have been done in the latter part of the preceding month, as well as what may be left for the first of the following one; and though calculated

for the climate corresponding with the latitude of New York City, they thus answer for a wide range of localities.

While there is not in January much work to be done out of doors, there is a great deal of "head work" which may be disposed of in the house. In whatever horticultural pursuit one may be engaged, he should add at least one new book to his library, each winter, the latest and best upon his special branch. The man is to be pitied who thinks he has learned all, and we doubt if the best read, can go through a book without getting at least one "new wrinkle." Besides books, there are papers, wholly or partly horticultural, and every progressive man is likely to have more than one of these. Now is a good time to take up those which, during the press of spring and summer work were lain aside uncut, and run over their contents. This is one class of "head work;" another is to write to the *Agriculturist* that article—about something—that you hadn't time to write when it occurred to you, but meant to do it when you "got time."

Still another profitable mental occupation is "planning"—thinking out, and where the case admits of it, marking out, just what you intend to do and how you intend to do it. A wealthy Texan once told us that he made most of his money in bed. When he had any important enterprise in view, the only way in which he could escape interruptions was to go to bed and stay there until he had thought it out. While we do not exactly commend his method, we do approve of thoroughly maturing plans for large or small projects. The saving of time in laying out, planting, building, etc., from a plan drawn to a scale, is great—to say nothing of the probabilities that the work will be much better done than if left to chance. Another thing which may be profitably done, and which might have been included in the reading suggested above is—the study of catalogues. One who is wide-awake in any branch of horticulture will not fail to read the advertisements of all the dealers in whose stock he is interested, and if he wishes to know more, will send for nursery, seed and other catalogues—observing always, that new things are seldom underrated by those who have them for sale.

Orchard and Nursery.

Both orchardist and nurseryman will find something to do in preserving the trees they already have, as well in providing for further operations whether of buying or selling. Cattle will often in winter do more injury to a young orchard in a few hours than months of nursing will repair; hence

Fences and Gates, about which people are usually so careless in winter, should be made tight. A few hours' work and some nails, may save much vexation and perhaps loss of neighborly feeling. Then other smaller animals are to be guarded against.

Rabbits, in many sections, do great damage by girdling young trees. Prevention is better than cure, and among the preventives already published are, wrapping the trunks with paper and smearing them with blood. A correspondent states, that the use of cow dung, sufficiently thinned with water to apply with a brush, some sulphur being added, renders the bark so offensive as to repel the rabbits. Apply as often as it is washed off.

Mice are also destructive, especially to small trees, currant bushes, etc. They generally work under the cover of litter or light snow, hence the ground should have been left clean. Tramp the snow down close around the trunk. Don't shoot the owls.

Broken limbs of trees sometimes result from an unusual weight of snow or other cause, and as soon as the damage is discovered, steps should at once be taken towards repairing it. The fracture usually takes place when a limb joins the trunk or a larger limb, and leaves a long ragged wound. This must be smoothed with the drawing knife, chisel, or whatever tool will best make a clean surface, and then covered with grafting wax or clay. If the latter is employed, use plenty and bind it on with old cloth. Last year there was much bemoaning the ravages, which were made upon fruit trees by the

Tent Caterpillar.—Save much vexation, and the trees at the same time, by carefully examining, on a mild day, for the clusters of eggs. These are found near the ends of the twigs and, at a distance, look like a diseased swelling. A close inspection of this swelling will show it to be composed of several hundreds of long eggs, placed closely together endwise and covered with a water-proof varnish. The engraving gives one of the clusters of the natural size, but they are deposited upon rather larger twigs. Destroy one of these clusters and hundreds of pests will never see the light. Let them remain and the young caterpillars will escape from the eggs about the time the trees leaf out, and there will soon be an "army with banners"—or with tents, which is rather worse, as it shows they mean to stay. Upon high limbs these eggs can be seen against the clear sky, and be removed from these by means of shears or other cutting implement attached to a pole. Most orchards should be under-drained, and it may be done between the rows after planting; if there are any low spots, open



Surface Drains, to carry off the water which may accumulate there. Where there are unprofitable trees which are still thrifty, make preparations for

Grafting them with better sorts. It does not pay to graft old and worn out trees. Professional grafters who go about the country, are some of them reliable and worthy men, and others are ignorant and careless. Grafting is so simple an operation that he must be helpless indeed, who depends upon another to do it for him. Begin by securing

Cions, of the desired sorts, which may be cut any time in mild weather, from now until the buds swell. Tie each sort by itself, label securely, and pack so that they will not dry up, or be subject to great changes of temperature. A cool, frost proof cellar is the best place, and they may be buried in the earth of the cellar bottom, or if this is not practicable, place them in boxes of earth or dampened moss.

Root Grafting, which was described in January and Dec., 1864, may be carried on at leisure times. *Nurseries* occupy the hands in suitable weather in cutting back and shaping young trees, and on stormy days, labels and other conveniences for packing the spring sales may be made and stakes got out for marking rows. Stakes of all kinds should have the portion that goes into the ground covered with gas tar, which is cheap and readily obtained in most cities and large towns using gas.

Fruit Garden.

The remarks relating to the care of trees in the orchard, apply equally well to those in the garden.

Grape Vines, which failed to get their annual pruning, better have it done now during a thaw than to delay until spring. In mild weather pruning may be done on

Gooseberry and Currant Bushes.—The general rule is to thin out the old wood so as to leave the bush quite open, and to shorten that of last year's growth by cutting away one-third or one-half according to its strength. It is well to look occasionally to the covering of those plants under

Winter Protection, as the earth may wash away or leaves and straw be blown off. When there is a good covering of snow all is safe as long as that remains. Look about and see what wood work will be needed, such as

Trellises, Stakes and the like. Prepare them while there is time

Kitchen Garden.

The garden is covered by a deep snow, but if our advice has been followed, there are succulent parsnips, and spinach, and savory salsify, and leeks, under the white blanket, awaiting the time when a spring or earlier thaw shall make them come-at-able. Those mounds, higher than the general level, show where cabbages and celery are

snugly stowed away, and that irregular looking patch is where the parsley has been covered with evergreen, and now by lifting the cover, a picking of bright green leaves may be had at any time. Then the cellar contains a store of most of these things—besides many others—all covered with light sandy loam, from which they may be taken fresh and in perfection. If there is any farmer who cannot thus chuckle over his garden products, we would rather not board with him. Let him immediately appropriate half an acre of the best land nearest to the house, for a garden, and resolve to read our notes every month and to follow their teachings. We do not write this for professional or market gardeners, but for those with whom gardening is not a business, though the former class will often obtain useful hints from these columns. Having fixed on a place for the garden, and considered how it shall be fenced, for chickens must be kept out at times, then decide what to grow and where to grow it, and be on the look out for seeds and plants, as well as a supply of good

Manure.—Begin a compost heap which shall receive all the odds and ends of fertilizing material, liquid or solid. Read on page 14 how our Rhode Island friend manages his privy, and see if there is not \$50 going to waste in yours, and a nuisance accumulating there besides. Have an eye open as you go by slaughter houses, tanneries, distilleries, breweries, and all sorts of manufactories, and see if there is not some fertilizing material which may be had for the carting or a little more. A stock of

Poles and Brush will be needed for peas, beans and other climbers, which are readily got in winter. If such materials are scarce, it will pay to take care of them. Dip the lower ends in gas tar, and house when not in use, and they will last several years. Those who have cabbage and other plants in

Cold-Frames should give them all the air the weather will allow, and protect during extreme cold by the use of straw mats, shutters, etc.

Hot-Air Frames, and Sash will need repairing. Cover the inside and the lower edge, and a few inches up the outside of the frames, with gas tar and they will last much longer. Those who have no hot-beds must wait awhile until we can find room to give directions for making them. Such work, as well as the repairing of

Tools, may be advantageously done in the winter months. A new handle or a little blacksmithing, and a touch of the grindstone or file, will frequently make an old hoe or rake as good as new. Don't wait until the cultivator is wanted before the needed new teeth are put in, but repair it now and at the same time give the wood work a coating of paint or oil. The best of neighbors will sometimes need to borrow, and it is best to have every implement marked in plain characters.

Seeds need much more care than they usually get—care especially in getting the best sorts and from reliable sources. Overhaul those on hand and be ready to make purchases. Our advertising columns direct to reliable men. Seeds, the vitality of which is doubtful, may be tried in a box of earth in a warm room, noting the proportion which start.

Flower Garden and Lawn.

If all the tender things have been covered, there will be but little out-door work. Let it be remembered that with many plants more injury is done by the alternate freezing and thawing of early spring than by the cold of winter. There is usually a mild spell in January, during which tender plants, yet neglected, may be covered. After a heavy fall of snow, shake the snow out from evergreens, and other trees and shrubs where it accumulates in large masses, while it is still light; and if large drifts have formed around low branching evergreens, shovel it away, lest the drift as it settles injure some of the branches. Nothing gives so cheerful a winter aspect to a place as evergreens, and winter is the time to decide where they may be best introduced. In a walk about the grounds on a mild day in winter, many improvements will suggest themselves. All plans may be matured

now, and it often happens that the weather will allow of breaking ground for walks and roads.

Green and Hot-Houses.

The amateur florist must look closely after his fires, the temperature of the green-house should never get below 40°, even where plants are merely to be kept alive through the winter, and it is useless to expect much of a show of flowers below an average of 60°. By proper care a succession of

Tulips, Hyacinths and other bulbs can be had in bloom. Bring a few pots at a time from the place where they have been set to root, and give them light and warmth. As soon as the flower fades, cut away the stalk, and allow the leaves to remain as long as they will.

Camellias are apt to drop their buds unless the atmosphere is kept moist. Where several buds crowd together in a cluster, remove all but two and allow them room to develop. Those in the dwelling house should be kept as cool as possible without freezing, and the foliage occasionally washed to remove the dust. A sprinkling over the bath tub, then a slight rubbing with the thumb and finger of each leaf to loosen the dirt, and then another drenching to wash it off, greatly benefit camellias and other smooth leaved plants.

Ivy, so much used now for parlor decoration, is kept bright and green by this treatment. A bath tub is a great adjunct to the window conservatory, as pots may be removed to it and sprinkled freely, to their great good. Water used on plants should be brought to the temperature of the apartment.

Cactuses may be kept at rest and nearly dry, while

Roses, that are showing flower, may have a stimulus of weak manure water.

Verbenas and Petunias may be pushed along, that their growth may furnish a stock of cuttings.

Violets, Candytuft and such things in cold frames need to be freely aired, whenever it can be done without risk, and securely covered on cold nights.

Pelargoniums need to be put near the glass, where they will have plenty of light. Tie out the branches to make good shaped specimens, and avoid growing the long-legged drawn up things we so often see. Better a few well grown and well formed plants of any thing, than a lot of shapeless rubbish.

Apiary in December.

Prepared by M. Quinby—By request.

Bees in the open air winter better in tall hives than in low flat ones. The honey is stored in the upper ends; the bees commence at the bottom, and ascend as their stores are consumed. The warmth from the bees keeps the honey immediately above them free from frost, and they have but little difficulty in reaching it at all times. But such tall hives cannot accommodate a sufficient number of surplus honey boxes; hence the necessity of compromise between the tall and flat hives. The discovery has just been made that the long, movable comb hive, such as described in Bee-keeping Explained, and *American Agriculturist* can be converted into the tall one at pleasure. Put it on its side in summer, when the room for the boxes is needed; the bees store the honey for winter in the back end. The bottom board and top are fastened to the body of the hive temporarily, when it is raised on one end, and changed at once into the tall hive. An opening being made at the bottom for air, and for a passage way for the bees during winter, completes it. In spring it is turned down, and it is the shallow hive again. Any reader of the *American Agriculturist* having such hives in use, may venture to make change without fear of infringing any patented rights.

Air passages should never be allowed to get choked with dead bees and ice. When mild weather occurs to melt the frost, raise the hive and sweep out clean. Should severe weather last three or four weeks steadily, common hives should be brought to a warm, dark room for a day to thaw out the frost, and allow the bees to get at their stores. The tall hives will only need care to keep the air passages open, to have them winter safely.

Our Excellent Premiums, STILL CONTINUED.

We invite special attention to the list of first-rate premiums offered in the accompanying table. They are designed for subscribers for this volume (25th), and the offer will be open for several months yet. So there is abundant time to fill out lists already commenced, and to start new lists of names. We are constantly receiving premium clubs from persons who say they found it quite easy to get up a club when they took hold of the matter in earnest. Not a few have obtained \$25 to \$100 articles by three or four days' work, and some by only a few evenings. It is only necessary to show a copy of the paper, and explain its leading features, its large amount of condensed information, its fine and valuable engravings, etc., to convince almost any man that it will pay him to take the paper a year.

We have no special or traveling agents, but any one disposed to do so can act as voluntary agent, and receive the premium as an acknowledgment of his efforts, and if it be an article he does not want, he can usually sell it for nearly or quite the regular price, and thus receive a good compensation.

Men and Women, of various occupations, Farmers, Gardeners, Post-masters, Merchants, Mechanics, Clergymen, Teachers, Soldiers, Boys, Girls, etc., can engage in the work, and secure good pay for it, in the premium articles, which are all good and desirable.

Table of Premiums and Terms, For Volume 25.

Open to all—No Competition.

Names of Premium Articles.	Price of Premiums.	Names at \$1.00 each.	Names at \$1.50 each.
1—Good Books—See terms below.	\$5.00	11	35
2—Garden Seeds for a Family (40 kinds).	\$5.00	12	35
3—Flower Seeds for a Family (100 kinds).	\$5.00	14	35
4—Nursery Stock (any kinds desired).	\$20.00	30	100
5—Iona Grape Vines (12 of No. 1).	\$18.00	27	92
6—Concord Grape Vines (100 of No. 1).	\$12.00	19	65
7—Strawberry Plants (100 of good kinds).	\$5.00	14	35
8—Japan Lilies (12 Bulbs).	\$6.00	15	38
9—Downing's Landscape Gardening.	\$6.50	15	40
10—American Cyclopedia.	\$20.00	96	338
11—Mitchell's New General Atlas.	\$10.00	18	60
12—Worcester's Great Illustrated Dictionary.	\$12.00	19	65
13—Any back Volume <i>Agriculturist</i> .	\$1.75	20	70
14—Any two back Volumes do.	\$3.50	26	92
15—Any Three do do do.	\$5.25	16	52
16—Any Four do do do.	\$7.00	13	38
17—Any Five do do do.	\$8.75	15	44
18—Any Six do do do.	\$10.50	17	50
19—Any Seven do do do.	\$12.25	19	64
20—Any Eight do do do.	\$14.00	21	64
21—Any Nine do do do.	\$15.75	23	72
22—Morton's best No. 5 Gold Pen, Silver Case.	\$4.50	12	60
23—The County Election do do.	\$10.00	18	60
24—Halt in the Woods do do.	\$10.00	18	60
25—Morton's best No. 5 Gold Pen, Silver Case.	\$4.50	12	60
26—Case of Drawing Instruments.	\$3.00	16	45
27—Lady's Rosewood Writing Desk.	\$12.00	19	65
28—Gentleman's do do do.	\$14.00	21	70
29—Best Family Clothes-Wringer.	\$10.00	18	53
30—Dolly's Washing Machine.	\$12.00	19	65
31—Tea Set (Best Silver Plated).	\$50.00	67	240
32—Sewing Machine, (Wheeler & Wilson).	\$55.00	70	270
33—Sewing Machine (Wilcox & Gibbs).	\$55.00	70	270
34—Sewing Machine for Tailor Work.	\$60.00	75	280
35—Melodeon (Best Four Octave).	\$67.00	80	300
36—Melodeon (Best Five Octave).	\$112.00	140	450
37—Piano, 7-Octave (Steinway & Sons).	\$500.00	500	1500
38—Barometer (Woodruff's Mercurial).	\$12.00	19	70
39—Barometer (Woodruff's Mercurial).	\$18.00	22	85
40—The Aquarius, or Water Thrower.	\$11.00	19	65
41—Buckeye Mowing Machine No. 2.	\$125.00	150	450
42—Allen's Patent Cylinder Plow.	\$30.50	31	100

No charge is made for packing or boxing any of the articles in this Premium List. The Premiums, 1, 2, 3, 7, 8, and 13 to 26, are DELIVERED to any part of the United States and Territories, free of all charges. The other articles cost the recipient only the freight after leaving the manufactory of each. Every article offered is new and of the very best manufacture.

*** Premium 1.—Good Books.**—Any person sending 25 or more subscribers, may select Books from the List on page 5, to the amount of 10 cents for each subscriber sent at \$1; or to the amount of 30 cents for each name sent at the (ten) club price of \$1.30 each; or to the amount of 60 cents for each name at \$1.50. This offer extends only to clubs of 25 or more names. The Books will be sent by mail or express, prepaid by us.—This is a good opportunity for the farmers of a neighborhood to unite their efforts and get up an Agricultural Library for general use.

These Winter Months afford a very favorable opportunity for collecting premium lists.

FULL PARTICULARS about each premium article, etc., are given in a **"DESCRIPTIVE LIST,"** which we mail to any one desiring it. Send for it. The premiums are of a standard class, and enough can be obtained to give the premiums to all entitled to them. Each premium is for a specified number of names, as given in the Table, and any one knows just what he or she is working for, without regard to any higher number that others may obtain.

As fast as any subscriptions are obtained, send them along, that the subscribers may begin to receive the paper; and when all the names that can be obtained are forwarded, select the premium desired, and it will be promptly furnished. To save mistakes and the keeping of money accounts, send with each name, or list of names, the exact subscription money; or send at first the full amount for a club, and receive the premium, and then forward the names as obtained.

To avoid errors and save immense labor in looking over our books, it is absolutely essential that every name designed for a premium list be so marked **WHEN SENT IN.** (Such names are credited to the sender in a separate book, as fast as received—ready for instant reference.)

Old and new subscribers will count in premium lists, but they should be partly new names, for it is to obtain such that the premiums are in part offered. Premium clubs need not all be at one Post office. Of course only one premium will be given for the same subscriber.

The extra copy, usually offered to clubs of 10 or 20, will not be furnished when a premium is given.

The other Articles are fully set forth in the **DESCRIPTIVE LIST** above referred to, but we add a few items:

The Garden and Flower Seeds (2 and 3), are of first quality, of such kinds, and in such quantities as most families desire. They are sent post-paid, and are put up for us by the well-known and reliable dealers, J. M. Thorburn & Co., 15 John-street, New York. Any receiver of these premiums will usually have enough for himself and some to distribute among his Club.

The Nursery Stock (4), can be selected of such kinds and quantities as may be desired, from the Catalogues of either Parsons & Co., Flushing, N. Y., or of F. K. Phoenix, at Bloomington, Ill. Send a postage stamp or two for their priced Catalogues, naming that they are wanted with reference to this premium, and select the premium from these. The trees or other articles will be well packed and forwarded by any conveyance ordered, as soon as the season will admit. We guarantee that these premiums will be faithfully selected and forwarded. This is a capital chance to get \$30 worth of good stock cheaply.

The Grape Vines (5, 6), are also excellent premiums, and well worth working for.

The Japan Lilies (8), are among the most beautiful flowering bulbs, and can be planted in early spring. They are easily multiplied. Sent post-paid.

No. 9.—Downing's Landscape Gardening, etc.—A most beautiful volume, splendidly bound, and finely illustrated.

No. 10.—Appleton's New American Cyclopaedia, a magnificent great work, of 16 large volumes, containing condensed but very full information upon every topic. It is a whole library of itself, describing almost every subject, place, and thing, including countries, cities, all men of note who have ever lived, etc., etc. Almost every farmer could afford to sell an acre or more of his farm to purchase this work.

No. 11.—Mitchell's Large Geography, containing 84 Maps, and Plans, of high value, and may well be in every house.

No. 12.—Worcester's Great Dictionary, next to the Bible and Cyclopaedia, is the most important work for the family. The Unabridged Edition, illustrated with many engravings, describes and pronounces every word in our language.

Nos. 13 to 21.—We have stereotype plates of the *Agriculturist*, from volume 16 to 24, inclusive, from which we print any numbers needed. Any of these volumes desired can be furnished complete with index and title pages. Price \$1.50, or \$1.75, if sent by mail, as they must be pre-paid. These volumes are a valuable Agricultural Library in themselves, containing more varied information than can be obtained for twice the cost in any books. If desired bound, it will be done for 75 cents each volume, in neat style.

Nos. 22, 23, 24.—These are splendid large Steel Engravings, beautifully colored, the first two from paintings by BINGHAM, and the last by TAIT, which was until recently sold at \$15. They are published by Mr. Knædler, 773 Broadway, New-York City, formerly the American Branch of the celebrated House of Messrs. Goupil & Co., Paris.

No. 25.—Morton's celebrated Gold Pen, in convenient

extension Silver Case, with pencil. We give only No. 5, of his best quality, made of coin gold and silver.

No. 26.—An excellent assortment of drawing or Draughting Steel and Brass instruments, each piece neatly fitted into a Rosewood Case. For particulars see Descriptive Sheet.

Nos. 27, 28.—Very fine portable Rosewood Case, which holds all writing materials, and when opened forms a writing Desk. Very good for one's own use, or for a present to Teachers and others.

No. 29.—The Universal Clothes Wringer, with the Cog-Wheels, etc.—the best Wringer we know of—and a most valuable thing as a labor-saver and clothes-saver.

No. 30.—After nearly two years' trial, we can highly recommend this for general use. Several improvements have been recently added.

No. 31.—The Tea Set consists of six pieces, viz.: *Coffee Pot, Tea Pot, Hot-water Pot, Sugar Dish, Cream Cup, and Slop Bowl*, all of beautiful pattern and late style, embossed. They are of the best heavy plating, known as "Sheffield Plate," and are manufactured by the well-known Lucius Hart & Sons, No. 4 & 6 Burling Slip, (near our former Office). Mr. Hart has been in the same place upwards of 30 years; and the fact that he supplies the above premiums is, we suppose, a sufficient guarantee of their value.

Nos. 32, 33, 34.—We offer these kinds, to meet the wants of all. Nos. 32 and 33, for General Family Sewing.—No. 34, for family use, especially if heavy cloth, leather, etc., are to be sewed. Their respective advantages are given more fully in our Descriptive Sheet, noted above.

Nos 35, 36.—An excellent instrument, as we know from six years' trial of one in our Sunday School room. Send a stamp to Geo. A. Prince & Co., Buffalo, N. Y., for an illustrated descriptive catalogue, giving sizes, prices, etc. Many neighborhoods and schools have combined in raising clubs of subscribers, and secured through us these instruments for Churches, and for Day School and Sunday School rooms.

No. 37.—Steinway & Sons' Pianos are too well known to need a word of commendation. Send to them at No. 71 & 73 East 14th-st., N. Y. City, for descriptive catalogue. The kind we offer is: "7 Octave, Rosewood case, large front Round Corners, Carved legs and Lyre; Over-strung Base, with their Agraffe Treble, and containing all modern improvements." We offer this premium on extraordinary terms. It will pay a Lady for a year's work. There are many who by securing the aid of friends in neighboring towns, and by a thorough canvass, may readily obtain the requisite number of subscribers. There are in almost every town more than 500 families who ought to have the *Agriculturist*. Two or three persons (one a railroad Conductor,) have each sent more than subscribers enough to obtain this magnificent premium. It would pay an enterprising man to canvass for this, and afterward sell it.

Nos. 38, 39.—A very useful instrument, for farmers especially, as a weather guide. (See remarks below.)

No. 40.—The *Aquarius*, or Water-Thrower, is an excellent portable force-pump, useful in many ways—to water the garden or plants, to wash windows, carriages, etc. One can catch up the implement, carry it to any place, and from a pail throw a considerable stream of water 20 to 30 feet or more, and thus sometimes put out an incipient fire that could not be readily reached otherwise. Send to Wm. & B. Douglas, Middletown, Conn., for circular giving full particulars.

No. 41.—The Buckeye Mower is so widely known and approved, that we need not use space to describe it. Send to Ad. Lance, Platt & Co., Manufacturers, 163 Greenwich-st., New-York, for circulars, etc., giving particulars. A few farmers might unite their efforts, and readily secure subscribers enough for this premium, and own it in common. Many can raise a club of 100, alone.

No. 42.—Allen's Cylinder Plow. (See Descriptive List.)

Barometers Useful to All.—As an answer to sundry inquiries we say, in general, that a good barometer is useful to every person who has any occasion to be solicitous about the weather. There is hardly a change of any kind impending that is not indicated by the rise or fall of the mercury, while its steady continuance at the same level is a pretty sure "sign" that the weather is not to change soon. Any one having a barometer hanging in sight, insensibly comes to watch its indications, and base his plans upon its prognostications, and with far more certainty than upon the directions of the wind or the appearance of the sky. The interest upon the cost is hardly a dollar a year, while the whole cost is often more than counterbalanced by its aid on a single occasion. For example, many of our readers have narrated to us the saving of several loads of hay from damage, simply from having followed the barometer when it went contrary to the appearance of the sky. A barometer in the house leads the children to observation and study of atmospheric changes. We have recommended Woodruff's Patent, the one in our premium list, (made by Chas. Wilder, Peterboro, N. H.) because of its greater portability than that of any other kind of mercurial barometer. It is pretty fully described in our extra premium sheet, sent to those desiring it. A full description of the barometer, prices, etc., can be obtained by applying to Mr. Wilder. Many can obtain them with a little effort through our premium offers.

BOOKS FOR FARMERS and OTHERS.

[Any of the following books can be obtained at the Office of the *Agriculturist* at the prices named, or they will be forwarded by mail, post-paid, on receipt of the price. These prices are positively good only to February 1st.]

Allen's (L. F.) Rural Architecture.....	\$ 1 50
Allen's (M. L.) American Farm Book.....	1 50
Allen's Diseases of Domestic Animals.....	1 00
American Bird Fancier.....	30
American House Cultivator.....	30
American Weeds and useful Plants.....	1 75
Art of Saw Filing..... (Holly).....	1 75
Barry's Fruit Garden.....	1 75
Beecher's (Henry Ward) Fruit, Flowers and Farniluz.....	1 75
Bement's Poultry's Companion.....	2 00
Bement's Rabbit Fancier.....	30
Blake's Farmer's Encyclopedia.....	1 50
Bonssingault's Rural Economy.....	1 75
Bridgeman's Fruit Cultivator's Manual.....	1 75
Bridgeman's Young Gardener's Assistant.....	2 00
Bridgeman's Kitchen Garden Instructor.....	75
Bridgeman's Florist's Guide.....	75
Brand's Age of Horses (English and German).....	50
Breck's Book of Flowers.....	1 50
Brown's Field Book of Manures.....	1 50
Buist's Flower Garden Directory.....	1 50
Buist's Family Kitchen Gardener.....	1 00
Burr's Vegetables of America.....	5 00
Carpenters and Joiners' Hand Book..... (Holly).....	75
Chorley's Grape-Grower's Guide.....	75
Cobbett's American Gardener.....	75
Cole's (S. W.) American Fruit Book.....	75
Cole's Veterinarian.....	75
Colman's Agriculture.....	5 00
Copeland's Country Life.....	4 50
Cotter's Bee-Keeping.....	75
Cotton Planters' Manual (Turner).....	1 50
Dadd's Modern Horse Doctor.....	1 50
Dadd's (Geo. H.) American Cattle Doctor.....	1 50
Dana's Muck Manual.....	1 25
Dog and Gun (Hooper's).....	30
Downing's Landscape Gardening (new Edition).....	6 50
Downing's Country Residences.....	2 50
Downing's Fruits and Fruit Trees of America.....	3 00
Downing's Rural Essays.....	5 00
Eastwood on Cranberry.....	75
Elliott's Western Fruit Grower's Guide.....	1 50
Employment of Women—By Virginia Penny.....	1 50
Flax Culture.....	50
Frederick's Farm Drainage.....	1 25
Field's (Thomas W.) Pear Culture.....	1 25
Fish Culture.....	1 25
Flint (Charles L.) on Grasses.....	2 00
Flint's Milch Cows and Dairy Farming.....	2 00
Fuller's Grape Cultivator.....	1 50
Fuller's Strawberry Culture.....	20
Goodale's Principles of Breeding.....	1 25
Gray's Manual of Botany and Lessons in one Vol.....	4 00
Gray's How Plants Grow.....	1 25
Guenon on Milch Cows.....	75
Hall's (Miss) American Cookery.....	1 25
Harshbarger's Horticulture, &c.....	5 00
Harshbarger's Injuries to Vegetation.....	2 50
Harris' Insects Injurious to Vegetation, colored plates.....	4 50
Herbert's Hints to Horsekeepers.....	1 75
Hints to Riflemen, by Cleveland.....	1 50
Holly's Country Seats.....	4 50
Hop Culture.....	30
Hovey's Fruit and Wine to Fine Orchards.....	1 50
Insect Enemies of Fruit Trees, (Tribble).....	5 00
Jacques' Fruits and Fruit Trees.....	60
Jennings on Cattle.....	2 00
Jennings on Swine and Poultry.....	2 00
Jennings's Horse and his Diseases.....	2 00
Johnston's Agricultural Chemistry.....	1 75
Johnston's Elements of Agricultural Chemistry.....	1 25
Kemp's Landscape Gardening.....	2 00
Lancroft on the Honey Bee.....	2 00
Loulton's (Downing's) Ladies Flower Garden.....	2 00
Lowry's How to Build Hot-Houses.....	1 50
Liebig's Familiar Letters on Chemistry.....	1 50
Liebig's Modern Agriculture.....	1 25
Liebig's Natural Laws of Husbandry.....	1 50
Linsley's (D. C.) Morgan Horses.....	1 50
Manual of Agriculture by G. Emerson and C. L. Flint.....	1 50
Mayhew's Illustrated Horse Doctor.....	3 50
Mayhew's Horse Management.....	3 50
McMahon's American Gardener.....	2 50
Miles on the Horse's foot.....	75
Morrell's American Shepherd.....	1 75
My Farm of Edgewood.....	1 75
Norton's Scientific Agriculture.....	75
Onion Culture.....	30
Our Farm of Edgewood (bound) 60c..... (paper).....	30
Pardee on Strawberry Culture.....	75
Parsons on the Rose.....	1 50
Phantom Bonquet, or Skeleton Leaves.....	2 00
Pedder's Land Measurer.....	60
Quinby's Mysteries of Bee keeping.....	1 75
Rabbit Fancier.....	30
Randall's Sheep Husbandry.....	1 50
Randall's Fine Wool Sheep Husbandry.....	1 00
Rand's Flowers for Parlor and Garden.....	3 00
Richardson on the Dog.....	30
Rivers' Orchard Houses.....	50
Rural Affairs..... (bound)..... each.....	1 50
Rural Journal (by Joseph Harris).....	25
Rural Register (by J. J. Thomas).....	30
Samder's Domestic Poultry..... paper, 30 cts., bound.....	60
Saxton's Farmers' Library, set of 3 Vols. morocco.....	9 50
Saxton's Farmers' Library, set of 3 Vols. cloth.....	8 50
Schenck's Gardener's Text Book.....	1 75
Shepherd's own Book.....	2 25
Skiffell Housewife.....	75
Smith's Landscape Gardening.....	1 50
Spencer's Education of Children.....	1 50
Stewart's (John) Stable Book.....	1 50
Templeton's Mechanic's Pocket Companion.....	1 50
Techer's Hough.....	75
Tenny's Natural History and Zoology.....	3 00
Thaer's (A. D.) Principles of Agriculture.....	2 50
The Great West, bound.....	1 00
Thomas' Fruit Cultivator.....	1 00
Thompson's Food of Animals.....	1 25
Tobacco Culture.....	25
Todd's (S. E.) Young Farmer's Manual.....	1 50
Tucker's Register Rural Affairs.....	30
Vaux's Villas and Cottages.....	3 00
Villas and Farm Cottages, (Cleveland and Backus).....	3 00
Warder's Hedges and Evergreens.....	1 50
Ward's Elements of Agriculture.....	1 50
Watson's American Home Garden.....	2 00
Wax Flowers (Art of Making).....	2 00
Wet Days at Edgewood.....	1 75
Wetherill on the Manufacture of Vinegar.....	1 50
Wheat Plant (John Kilpatrick).....	1 50
Woodward's Country Homes.....	1 50
Woodward's Greenhouses.....	1 00
Yonatt and Spooner on the Horse.....	1 50
Yonatt and Martin on Cattle.....	1 50
Yonatt on the Hog.....	1 00
Yonatt on Sheep.....	1 00
Yonmans' Household Science.....	2 00
Yonmans' New Chemistry.....	2 00

The following statement of facts, received from Mr. Harris, just as we are going to press, explains itself:

A CARD.

To the Friends of the Genesee Farmer:
ROCHESTER, N. Y., Dec. 16, 1865.

As previously announced, I transferred the *Genesee Farmer and Rural Annual*, to Messrs. ORANGE JUDD & CO., of the AMERICAN AGRICULTURIST, New-York, thinking that this arrangement would be advantageous to myself and the patrons of the *Genesee Farmer*.

But it seems that a young man in my employ, whom I left to mail the December number of the *Farmer*, while I was absent, surreptitiously printed and put in copies of the paper, a circular, stating that a new Agricultural Journal would be started in Rochester, published I presume, (for I have not seen the circular,) by the young man himself.

Now, while this is exceedingly annoying to me, and clearly a "breach of trust," on his part, yet I do not suppose that any one receiving the circular, will be misled by it. For fear, however, that possibly some may not at first detect the fraud, I have thought it best to make this statement of the facts in the case. Should it be necessary for the protection of the patrons of the *Genesee Farmer*, legal proceedings will be instituted, restraining this young man from availing himself of the advantages (however small) of this dishonest conduct. As he has hitherto borne a good character, I presume he was induced by other parties to put in the slip, and lend his name to an enterprise which they must have known would end in failure. I should let the affair quietly drop, only that I fear some of the old friends of the *Genesee Farmer* may be imposed upon. I trust that every one of them will take the AMERICAN AGRICULTURIST, and I am sure that they will not then regret that the change has been made. JOSEPH HARRIS.

The Department of Agriculture.

One of our Washington correspondents informs us that the illustrious head of the Department of Agriculture does not like our strictures upon his management and that he "threatens vengeance." It is only the rumble of the distant thunder, the lightning hasn't struck us yet, though our friends of the Massachusetts Ploughman have caught it. In its issue of Dec. 9th it says: "We mentioned a few facts last spring about the general management of the Department, upon which he sent us a threatening letter, virtually telling us to 'dry up.'" Now neighbor Ploughman let us have that letter, *verbatim et spellatim*. Let the farmers see what kind of a servant they are paying for. Poor Ploughman, we pity you, but we must not forget that we too are threatened. What is to be our fate? Will the commissioner write us a letter and compel us to read it? Will he squeeze the life out of us in that "hydraulic press." It would be only fair to put a press down on us, considering that the press is generally down on him. [We must state in parenthesis that a hydraulic press was needed for some purpose, and after much flourish the Commissioner procured a Hickock's cider mill and press. He was right as to the *Hi*, but the *draulic* was a little too much for him.] Will he put us down in the deep hole where the "airth sweats and makes all the petroleum?" Will he make an *analysis* (Departmentese for analysis) of us? or—worse than all—will he resign? The agricultural community might be benefitted by the resignation, but what would the White house do for garden truck? The Department might possibly be improved, but we should lose one great source of fun.

Now we only judge of the Commissioner by his official acts. He may be both honest and kind, and strive to do the best he knows how—the main trouble being that he don't know. As a public officer, whose salary we help pay, we have a right to criticise his public doings. Some of them are purely ridiculous, others are blundering, and the whole management of affairs is about as bad as it well can be. We have only one regret concerning what we have said about the Department: our paper goes to nearly all parts of the world, and it mortifies our national pride that the official head of our agricultural interests must be spoken of as unfitted for his position. We are not alone in our desire to have the Department of Agriculture under a head which should make it useful as well as creditable. Here are three opinions of the present Commissioner, from different sources, which came to our notice in one day. At a public meeting held at the Cooper Institute in New York City in December, Doct. Mac-

gowan made the following statement, as reported in the daily papers: "Quite lately he called upon the head of the Agricultural Bureau in Washington, with a proposition to introduce some of the plants and animals from Eastern Asia, and the illiterate Chief of that Bureau didn't know where Eastern Asia was!" The Country Gentleman, in its issue of Dec. 14, in noticing the Report for 1864, says: "Prepared, we presume mainly under the supervision of the late Chief Clerk, Mr. Grinnell, who entered into the duties of his position with a degree of energy and intelligence, which seem only to have procured his abrupt decapitation some months since"—it closes a notice of the report thus: "the volume concludes with reports from the different officials in the Department—which, with a really competent and intelligent man at its head, might be made of much service in the development of our agriculture." At the annual meeting of the Ohio Pomological Society, the following official action was had:

Resolved, That we feel deeply interested in the great Department of Agriculture connected with our Federal Government; that we desire its entire success, and believe it destined to contribute immensely to the advancement of Agriculture in the country; that we earnestly entreat the President of the United States to appoint a competent man to be the head of the Department of Agriculture; the incompetency of the present incumbent being a source of general remark and complaint from the intelligent agriculturists of all parts of our extended country. It is therefore

Resolved, That in the opinion of this convention, a change in the head of the Agricultural Department is imperatively needed for the best interests of the producing classes of the country, and the President of the United States is most respectfully petitioned to listen to the complaints embodied in the foregoing resolutions.

(Signed.) JOHN A. WARDER, President.

M. B. BATEHAM, Secretary.

The whole agricultural community, through the agricultural press, calls for a change in the Department of Agriculture. Mr. Newton and a few relatives wish matters to remain as they are. Which will the President heed?

Some Business Items.

Premiums.—See particulars on page 4.

Club Additions.—To Clubs of subscribers at club prices, additions can be made at any time at the same prices, if the additions begin at the same time as the others.

Back Volumes Supplied.—The back volumes of the *Agriculturist* are very valuable. They contain information upon every topic connected with rural life, out-door and in-door, and the last nine volumes make up a very complete library. Each volume has a full index for ready reference to any desired topic. We have on hand, and print from stereotype plates as wanted, all the numbers and volumes for nine years past, beginning with 1857—that is, Vol. 16 to Vol. 24, inclusive. Any of these volumes sent complete (in numbers) at \$1.75 each, post-paid, (or \$1.50 if taken at the office). The volumes neatly bound, are supplied for \$2 each, or \$2.50 if to be sent by mail. Any single numbers of the past nine years will be supplied post-paid, for 15 cents each.

Commercial Matters—Market Prices.

The following condensed, comprehensive tables, carefully prepared specially for the *American Agriculturist*, show at a glance the transactions for a month, ending December 20th, with other interesting comparative figures.

1. TRANSACTIONS AT THE NEW-YORK MARKETS.

RECEIPTS. Flour, Wheat, Corn, Rye, Barley, Oats.
27 days this month, 553,000 2,216,000 1,979,000 310,000 576,000 965,000
27 days last month, 414,000 617,000 3,163,000 137,000 1,329,000 1,175,000

SALES. Flour, Wheat, Corn, Rye, Barley.
27 days this month, 275,000 1,293,000 2,185,000 111,000 454,000
27 days last month, 317,000 1,616,000 2,629,000 141,000 583,000

2. Comparison with same period at this time last year.
RECEIPTS. Flour, Wheat, Corn, Rye, Barley, Oats.
27 days 1865.....553,000 2,216,000 1,979,000 310,000 576,000 969,000
27 days 1864.....457,500 1,782,000 3,171,000 63,000 688,000 1,175,000

SALES. Flour, Wheat, Corn, Rye, Barley.
27 days 1865.....275,000 1,293,000 2,185,000 111,000 454,000
27 days 1864.....416,000 1,661,000 655,000 104,000 434,000

3. Exports from New-York, January 1 to Dec. 16:

Flour, Wheat, Corn, Rye, Oats.
1865.....1,834,441 2,260,032 3,992,663 170,694 71,296
1864.....1,835,807 12,105,884 897,908 588 41,459
1863.....2,434,736 14,857,036 7,536,149 416,369 125,806
1862.....2,959,619 24,890,341 11,531,819 1,099,656 171,922

4. Receipts of Breadstuffs at Albany, by the New-York Canals from the opening of navigation to Dec. 7:

Flour, Wheat, Corn, Rye, Barley, Oats.
bbls. bus. bus. bus. bus. bus.
1865.....931,300 9,994,400 18,116,700 1,289,900 4,269,700 10,456,900
1864.....1,186,900 15,465,600 10,352,400 670,500 3,145,900 12,177,500
1863.....1,549,600 22,089,400 20,560,700 432,400 8,181,300 12,354,500

Gold has been as high as 148½, and as low as 144½, since our last, closing (Dec. 19) 146½. Receipts of pro-

duce have been quite liberal, since our last. The arrivals of new grain and of flour made therefrom have been generally unsound or of inferior quality. The receivers have been eager sellers, and have forced their supplies on the market, thus seriously depressing prices, in the absence of an adequate demand to sustain former values, though there has been some revival in the export trade. At the close, yesterday, flour was very dull. Wheat, firm, but not active. Corn, Rye, and Barley, quite heavy. Oats steady. Stocks of Flour and Grain here are deemed large for the season, in view of the probable moderate wants of the home and foreign trade, through the winter months. The pressure on the storage accommodation of the port has run up storage rates enormously, which must add largely to the cost of carrying supplies over to the spring season, when inland navigation, now closed, will again be resumed, and bring heavy receipts of fresh produce in competition with the stocks on hand here awaiting a market....In the Provision line, the tendency of prices has been strongly downward under the pressure of increasing supplies, and the efforts of speculative holders, especially of hog products, as also of Butter and Cheese, to realize. The demand for the leading articles has been moderate....Cotton has been in good supply and request at variable figures,—closing heavily....There has been more doing in Wool, but at easier prices, some holders having been eager to sell....Seeds have been in moderate request but cheaper....Hay, Hops, and Tobacco have been in fair demand and firm, closing buoyantly.

CURRENT WHOLESALE PRICES.

	Nov. 17.	Dec. 20.
FLOUR—Super to Extra St.	\$7 50 @ 8 40	\$7 00 @ 8 50
Super to Extra Southern.....	9 50 @16 25	8 70 @15 00
Extra Western.....	8 20 @16 00	8 10 @15 25
Extra Genesee.....	8 50 @12 25	8 50 @11 50
Superfine Western.....	7 70 @ 8 00	7 00 @ 7 50
RYE FLOUR.....	6 25 @ 7 00	5 50 @ 6 50
CORN MEAL.....	4 40 @ 4 85	4 15 @ 4 50
WHEAT—All kinds of White.....	2 45 @ 2 80	2 35 @ 2 75
All kinds of Red and Amber.....	1 70 @ 2 45	1 60 @ 2 37½
CORN—Yellow.....	1 00 @ 1 05	90 @ 1 00
Mixed.....	90 @ 97	88 @ 97
Oats—Western.....	60 @ 62	50 @ 62
State.....	61 @ 62	62 @ —
RYE.....	1 15 @ 1 20	95 @ 1 15
BARLEY.....	1 10 @ 1 28	90 @ 1 15
COTTON—Middlebys, ½ lb.....	51 @ 53	48 @ 50
HOPS—Crop of 1864, ½ lb.....	10 @ 45	10 @ 45
FEATHERS—Live Geese, ½ lb.....	90 @ 95	80 @ 90
SEED—Clover, ½ lb.....	93 @ 14	12 @ 13½
Timothy, ½ bushel.....	3 30 @ 3 40	3 70 @ 4 00
Flax, ½ bushel.....	2 85 @ 3 10	2 90 @ 3 05
STOCKS—Brown, ½ lb.....	11½ @ 16½	10½ @ 15½
MOLASSES, Cuba, ½ gal.....	45 @ 70	45 @ 65
COFFEE—Rio, (Gold price) ½ lb.....	18 @ 21	17½ @ 20½
TORRADO, Kentucky, &c., ½ lb.....	9 @ 30	0 @ 40
Seed Leaf, ½ lb.....	5 @ 40	5 @ 40
WOOL—Domestic Fleece, ½ lb.....	55 @ 82	50 @ 78
Domestic, pulled, ½ lb.....	45 @ 75	50 @ 65
California, unwashed.....	25 @ 43	25 @ 45
CATTLE, ½ lb.....	13½ @ 14½	13 @ 14
OTL CAFE—½ ton.....	50 00 @53 00	52 00 @55 00
PORK—Mess, ½ barrel.....	32 75 @33 00	27 50 @28 00
Prime, ½ barrel.....	— @28 50	22 00 @22 50
BEEF—Plain mess.....	11 00 @14 00	11 00 @14 00
LARD, in barrels, ½ lb.....	34 @ 38	15 @ 19
BUTTER—Western, ½ lb.....	38 @ 45	33 @ 38
State, ½ lb.....	38 @ 45	33 @ 38
CHEESE.....	14 @ 19	14 @ 19
BEANS—½ bushel.....	1 50 @ 1 75	2 00 @ 3 00
PEAS—Canada, ½ bushel.....	1 20 @ 1 22	1 23 @ 1 33
EGGS—Fresh, ½ dozen.....	37 @ 41	37 @ 43
POULTRY—Fowls, ½ lb.....	16 @ 13	14 @ 16
Turkeys, ½ lb.....	19 @ 20	14 @ 16
POTATOES—Merced, ½ bbl.....	2 50 @ 3 00	2 50 @ 3 00
Peach Blows, ½ barrel.....	2 25 @ 2 50	2 00 @ 2 50
Buckeyes—New, ½ barrel.....	2 50 @ 5 00	1 50 @ 1 75
APPLES—½ barrel.....	2 50 @ 6 00	2 00 @ 4 00

New York Live Stock Markets.—

BEEF CATTLE.—Average receipts for the past four weeks, 5343 head per week; average for the past year, 5047; for the previous month, 6386; for the same month last year, 6409. The general quality has been about medium, and until this week quite uniform. Selling prices average about as follows: Extra qualities, 18c@19c per lb., estimated dressed weight; medium to good, 15c@17c; poor to common grades, 10c@13c....**MILK COWS.**—Average weekly supply, 127. The cows offered have generally been of good quality, and mainly from N. Y. State. The best extra milkers have brought \$100@140 each; medium to fair, \$75@90; poor to ordinary, \$40@60....**VEAL CALVES.**—Average receipts for four weeks, 712 per week; for previous month, 1132; for same month last year, 1375; for the past year, 1750. The demand since our last issue has been uniformly active, and prices for good grass-fed calves have ranged \$15@25 each, or 13c@14½c per lb., live weight....**SHEEP AND LAMBS.**—The market has been rather unsteady, and demand not uniform. The quality of the stock has been about medium, until the present week, when a large number of premium Christmas animals were offered. Average weekly receipts for past month, 18,948; for the previous month, 25,850; for past year, 15,628. Prices average 7½c @8½c per lb. for sheep, and about 1c per lb. higher for lambs....**LIVE HOGS.**—Average receipts, 19,143; for previous month, 16,092. The second market week of the month, excessive receipts caused a sudden depression in the market, and prices have therefore varied from 10c to 13½c per lb., live weight; standing the present week 11½c@11¾c, for Western corn-fed, with indications of a further decline.



Containing a great variety of Items, including many good Hints and Suggestions which we throw into small type and condensed form, for want of space elsewhere.

Many Items are in type, for next month's number, in response to queries, etc., of our readers.

FORTY PAGES.—Though we promise to furnish only 32 pages in each number, yet the pressure of advertisements has been so great that the usual space is much exceeded; but justice to our readers and advertisers demands that we shall not reduce the number of reading pages. Not only do we not decrease them, but for each page of advertisements added, we also add a page of reading matter. This precedent in the first number of the new year we expect to follow throughout the volume. So our readers may reasonably expect several extra sized and extra good papers during the year.

See the Premiums.—Of course we are interested in them, but they are a good thing every way. Excellent articles are easily obtained by many persons, while by means of the efforts to obtain them, thousands of persons are led to profitable reading. See pages 4, 5.

The Rural Annual Delayed.—The transferring of the Office from Rochester to New-York, and other causes have delayed the publication of this valuable volume a little, but it will be ready soon after Jan. 1, and forwarded to those who have sent for it. It will be richly worth the cost to every one (25c. post-paid).

What Books.—At this busy season we have not time to answer numerous inquiries about what books to buy. The list on page 5 gives the titles of most of those issued on Farming, Gardening, etc., with the prices at which they will be supplied at this office.

Walks and Talks over a Genesee County Farm.—Well—we have taken friend Harris' arm and enjoyed a very pleasant walk, over part of his farm, and his talk, so spicy and instructive, has so filled up the time and set us so to thinking about our own place, that we find we have not gone over very much ground after all. It is a pretty fair farm; there is a good deal more to see and talk about upon it; and with his permission we will invite our readers to accompany us on our walk with him month after month through the year, very sure that they will all enjoy it and be greatly profited.

Special to Advertisers.—1st. To ensure admission, early application must be made. Our regular space this month was all engaged before Dec. 1st, and though we attempted to add extra pages enough to accommodate those who were very urgent, but were later in applying, we are still obliged to leave out nearly all who applied after Dec. 10th, amounting to several hundred lines.—2d. No advertisement of Patent Medicines, or any thing of a seeret character is desired. —3d. We want no advertisers who will not do just what they promise to do. We request those unknown to the editors personally or by general good reputation, to furnish such references and other information as will fully satisfy us that they are to be confidently relied upon. The Assistant in charge of this department, is instructed not to admit advertisements from any one whom he would not himself patronize with cash, or orders, if he happened to want the things advertised and at the price asked. This explains why advertisements from distant unknown parties are frequently omitted, though often from good men, doubtless. By living up to these requirements we aim to make our advertising pages of great value both to the readers of the *Agriculturist* and to the advertisers themselves. Circulars, with terms of advertising, etc., are sent to those desiring them.

A Talk with our Readers, about the Advertisements.—A gentleman from Trenton, who called the other day to renew his subscription, remarked that "He was in mercantile business and was not a cultivator, and had no family, yet he took the *Agriculturist* mainly for its advertisements. He had stopped the — a religious journal, because disgusted with its medicinal and other disreputable advertisements, as he considered them, which were constantly flaming out before his eyes." He went on to say that he had observed many hints about his own business, by the diligent study of the varied and various business announcements of other men in different journals, and no other paper gave him so much satisfaction in this line as the *Agriculturist*, because there he met with nothing of an objectionable

character. Of course we esteem such testimony, and shall strive to ever merit it.—The advertising department is valuable to every one. It wakes up and enlarges the ideas of the plainest farmer to scan over such pages as occupy the business columns of this paper, while multitudes find just the things they want, and learn where they are to be obtained, and generally at what prices. Seeds, for example, of all kinds are now readily obtained from any part of the country, as they are conveniently and safely transported by mail at the nominal postage of 8 cents per lb. (2 cents for each 4 ounces or fraction of 4 ounces). There is a large variety advertised in this paper from month to month. We advise our readers to look carefully through the whole of the advertisements, and see what is offered. These winter months are the best time to provide for seeds, implements, trees, plants, etc. Catalogues and Circulars can now be sent for and consulted, correspondence carried on, and orders given, while there is a full assortment to select from.—It is always a source of satisfaction to business men, to have those ordering of them, or sending for their Circulars, Catalogues, etc., to state where their advertisements were seen, and we request our readers to bear this in mind. One of our good advertisers recently informed us that in one mail he received 371 letters which stated that they had seen his advertisement in the *Agriculturist*, and that these letters came from all parts of this country, and the British Provinces. Other mails brought a similar influx of letters, amounting in all to over ten thousand. He thought this journal must have an immense circulation in every nook and corner of the land, among an intelligent and wide-awake class of readers—which is undoubtedly correct.

The Death of Charles Hairs.—The personal friends of this gentleman will be pained to learn of his somewhat sudden death, and even those who only occasionally visited the *Agriculturist* office will miss the pleasant, clear, English face, which they had been accustomed to see here. Mr. H. was from London, England, but was, we believe, without relatives in this country. He had been principal business assistant in the office for more than eight years. While attempting to stop a street car he was struck by another car, which he did not notice was approaching on another track, and the result of the collision was a wound in the head, which though not regarded dangerous at first, had a fatal termination in about two weeks. Mr. H. possessed remarkable business talents, which rendered him valuable in his position, and a geniality of disposition which endeared him to his associates, and rendered him popular with a large circle of acquaintances.

Ohio Cheese Manufacturers' Association.—The second annual meeting of the Ohio State Cheese Manufacturers' Association, will be held in the city of Cleveland, January 24th and 25th. The annual address will be by X. A. Willard. The meeting will be one of great public interest, and a large attendance is expected. Reports will be made from thirty cheese factories, and also from a large number of private dairies. The topics to be discussed are: Improved methods of cheese manufacture; best manner of marketing cheese; uniform style of cheese manufacture for 1866; the best manner of organizing factories—whether by private enterprise, by corporations, or otherwise; best breed of cows for the dairy; summer and winter management of milch cows.

Report of the Department of Agriculture for 1864.—In appearance, and as far as we have looked at the articles, in matter, this collection of essays is a great improvement upon those of former years. The illustrations are numerous, those of birds very good, those of fruit and cattle fair, and those of sheep as presentable as such greasy and wrinkly subjects will admit. Sheep are pleasant animals to look at, but they make ugly pictures. We have seen a great many bad looking blots which professed to be portraits of sheep, but the worst we ever saw is the one facing page 199 in the *Agricultural Report* before us. This could never have been taken from anything having life; it looks like an animal hewed out of wood and clothed with cast-iron pantaloons. We are sure that Mr. Grinnell, who has shown such good taste in the other illustrations, could never have put this in of himself. We congratulate him on the manner in which he has performed his task; for though the report appears as Isaac Newton's, every one who knows anything about the matter understands that all that is creditable about the arrangement and selection of the articles is due to the late chief clerk Mr. Grinnell. While admitting that in itself the book is a good one, and that it may be useful to the comparatively few who may be favored by their members of Congress, we protest against the whole system of making books of this kind at public expense; against collecting a lot of essays from ready writers and calling them a re-

port. It would be proper, had we a Commissioner who could do it, to publish a volume of statistics and an account of the improvements in agricultural matters, all of which could be condensed into a book one-fourth the size of the present one. But this going outside of the department for brains [warrantable perhaps under the circumstances,] to make up a series of elementary and popular manuals, on cabbages, sorghum, aquaria, etc., publishing them at public expense for the benefit of a few, is a flagrant outrage. The regular Agricultural book publishers are heavily, almost oppressively, taxed for being such. What right has the government to take the heavy taxes they pay, and use the money in publishing free-of-cost books of the same class that they publish? Why not publish school books, novels, or any other class of books as well. In the name of the tax paying community we call upon Congress to put an end to this cheat. There are doubtless some members there who will wink at the thing for the sake of a few copies of the mislabeled "Report," but we trust that the majority will see that it is a wicked misappropriation of the public monies.

The French "Bug" Exhibition.—An "exposition" of useful and injurious insects has recently been held in the Palais d'Industrie in Paris, under the direction of the French Minister of Agriculture. Our countryman, Townsend Glover, Esq., attended, and bore off the Imperial gold medal, given by the Emperor for the best contribution to the knowledge of insects injurious to agriculture. The medal has upon one side a medallion portrait of the Emperor, and on the other the inscription "Exposition des Insectes utiles et nuisibles, donnee par l'Empereur." Mr. Glover has for some time been employed by the Department of Agriculture at Washington, and the value of his labors not only in entomology, but in pomology, etc., has long been known to those interested in such matters, and perhaps now that they have a foreign endorsement, the illustrious head of our agricultural affairs may make some use of the talent he has had by his side, but carefully kept under a bushel. The publication of Mr. Glover's work has been recommended by our horticultural societies, and we advise Isaac Newton to look at the gold medal, and if he cannot heed the wishes of the sovereigns on this side of the water to follow the lead of a foreign potentate and do something creditable to his department and the country.

The School of Mines, Columbia College.—From having been one of the most staid and venerable of institutions, Columbia College has become endowed with new life. Its management has fallen into the hands of men who think that there is something worth studying besides Latin and Greek. One of the manifestations of this new order of things is seen in the School of Mines, opportunely founded to meet the great demand for instruction in practical science. Chemistry, Geology, Mineralogy, Mining engineering, Metallurgy and the kindred branches are taught by a corps of able professors. The rooms and facilities of the school are ample and through preparations were made for what was thought a large number of students—seventy—the classes are already full. For information address President F. A. Barnard, or Prof. C. F. Chandler.

Bushels of Ears.—"C. S. W.," whose excellent article on Western Agriculture we published in December (page 374), really intended to say, that the average yield of corn on his farm is, by measurement, 75 to 100 bushels of shelled corn. In a recent note he says: "In speaking of our corn crops, I had no thought of bushels 'of ears,' and such a construction of my statement was unwarranted. With us, and in every other region that I have visited, corn, and all other grain, is always bought, sold or estimated, in large quantities by weight." Several others have written, that he meant shelled corn.

The Southern Cultivator.—Very soon after the close of the war this paper made its appearance among our exchanges, it being the only agricultural paper among the States lately in rebellion that maintained itself during the years of disaster to the South. Its editor, Mr. White, is a well known writer upon southern agriculture and horticulture, and makes a useful paper. While we think the course of the *Cultivator* upon the labor question a mistaken one, we can commend its teachings in other matters to our friends at the South. The address of the editor is Wm. N. White, Athens, Ga. Price \$2.00 a year.

Pleasant Reading.—The Ladies' Diaries, on pages 30, 31, will both amuse and instruct. We have seldom met with a more agreeable advertisement.

The "No Ink Pen." Is a Humbug, engineered by a swindler who attempts to cheat people by assuming part of the name of Mr. A. Morion, the well known gold pen maker, who advertises in our columns.

A Pomological Meeting.—The committee on the Greeley Prizes, the action of which is noticed elsewhere, met on Dec. 12th at the residence of Wm. S. Carpenter, Esq. Several professional and amateur horticulturists were invited to join the committee after their official business had been disposed of, and the arrangement resulted in an exceedingly pleasant pomological *soiree*. There was upon the tables an exhibition of winter pears, which for extent and perfection of specimens, has seldom been equaled. Much attention is deservedly being paid by pomologists to the late keeping pears, and this collection of over 50 kinds shows that there is a large list to select from. Messrs. Ellwanger & Barry, Rochester, N. Y., exhibited 30 varieties. Messrs. Hovey & Co., Boston, 27. W. L. Ferris, Throg's Neck, N. Y., 7. I. D. Wolf, of the same place, 3. Geo. Bancroft, Newport, R. I., 2. I. Buchanan, Astoria, N. Y., 1. There was a fine display of apples, among the most noticeable of which were the Tompkins Co. King, from Havana, N. Y., and Northern Spy from Battle Creek, Mich. Among the pears eliciting special commendation, were Dana's Hovey and Augustus Dana. Several specimens of native wines from Ohio vineyards, presented by Dr. Warder, included a remarkably fine sample of Delaware.

The Agriculturist Strawberry.—We did not intend to publish any more reports at present concerning the plants we have sent out, but here is one from O. Hunter, Clinton Co., Iowa, which shows so great an increase that we give it as something remarkable:—"I received one strawberry plant on the 15th day of last April; the plant looked pale and out of health. I gave it a good wetting, buried its root and branch in moist earth for the space of 5 or 6 hours, and then carefully set it out in black loam, manured with well rotted barn-yard manure.—In about one week it started to grow, and now I have 452 well rooted plants."

Raspberry Queries.—"P. V. P." It is not easy to tell raspberries from a bit of stem. Yours looks like the Purple Cane.—H. C. Burdick. The Black Cap is propagated by bending down the branches in September, and burying their tips, which will strike root.

Sassafras Sprouts in an Orchard.—W. A. W. is troubled with sassafras sprouting up in his orchard. Thorough grubbing after plowing will clean it out and do the orchard good, and if none of the sprouts are allowed to grow after plowing and harrowing, the sprouts will soon die out. Sheep feed down such brushy growths very well, and a flock, turned in occasionally, and kept there only until they have fed off the grass and sprouts, will not bark the trees.

Ever-bearing Mulberry.—I. A. Pike, Worcester Co., Mass. This variety usually produces staminate flowers enough to fertilize the pistillate ones, and the fact that your tree produces a few berries would go to show that some staminate flowers were present. Our own tree of this variety is not worth the space it occupies, and we shall cut it down. The English mulberry gives a decent crop of better fruit, and is done with it, while this dribbles through a long season, and is not very good when obtained.

Books on Gardening.—D. Buffington. We know of no work especially devoted to market gardening. Watson's Home Garden is one of the best for general directions in cultivation. The secrets of successful market gardening are in getting the earliest possible crops, and to so arrange the rotation of crops as to get the most from the land. An article by Mr. Brill, in October last, will give an idea of the way growers manage with Cabbages, Cauliflower, and Lettuce. Tomatoes, Egg-plants, etc., are started early in extensive hot-beds.

The Greeley Prizes, Decision on Apples and Pears.—It will be recollected that in 1864 the Hon. Horace Greeley offered prizes of \$100 each, for the best apple, pear and grape for general culture, referring the decision to the Horticultural Department of the American Institute. At an exhibition held in the autumn of that year, the committee on apples and pears thought the time allowed was too brief, and they did not make an award. The committee on grapes awarded to the Iona, but the prize was declined by Dr. Grant, and the whole matter was passed over to another year, and referred to a larger committee, comprising several gentlemen from abroad. Three opportunities were presented for exhibiting fruit for competition in the Autumn of 1865, the last of which was on Dec. 12. The committee had great difficulty in coming to a decision, as they had to consider the healthiness of the tree or vine, and its adaptation to a wide range of localities as well as the quality of the fruit. In October they decided not to award the premium on grapes for the reason that, in their opinion,

no variety now before the public had fully proved itself as meeting the requirements that had been fixed upon, and this prize is still open for competition. On Dec. 12th last, the committee, after a long consultation, decided to award the premium for the best apple for general cultivation to the BALDWIN, and for the best pear for general cultivation to the BARTLETT, on pear stock. The best bushel of each was exhibited by W. R. Ward, of Newark, N. J., and the prizes go to him. While this decision probably will not satisfy every one, we think that, taking all the circumstances into consideration, the committees have made the best possible selection.

An Important Select Fruit List.—The committee on the Greeley prizes at their last meeting fixed upon two varieties each, of summer, fall and winter apples and pears, to recommend for general cultivation. Although this they consider as extra official, we are very glad that it has been done, and our readers will attach much importance to it when they know that it is the result of the deliberations of pomologists of such large experience as Chas. Downing, C. M. Hovey, Dr. J. A. Warder, Dr. I. M. Ward, Wm. S. Carpenter, and others: **APPLES.**—*Summer*: Primate and Red Astrachan. *Autumn*: Porter and Gravenstein. *Winter*: Hubbardston Nonsuch and Northern Spy. **PEARS.**—*Summer*: Rostiezer and Manning's Elizabeth. *Autumn*: Seckel and Sheldon. *Winter*: Lawrence and Dana's Hovey.

Gooseberry Literature.—A friend has shown us a little book which is interesting as an index of how much is made, in England, of some specialties. There gooseberry culture is a favorite pursuit among the working classes, and the cultivators resort to all possible means to bring their berries to the largest size. This book of 214 pages is called the "Gooseberry Grower's Register," and gives a detailed account of the different Gooseberry Shows held in Lancashire and five other shires in the year 1865. It gives a tabular view of the number of prizes obtained by each sort of berry, and is embellished by a portrait of the "London," which was the heaviest red berry, weighing 33 dwts., 13 grs. (nearly 1½ oz.) The growers of Patterson, N. J., formerly held gooseberry shows, but we have heard nothing of them for a year or two. It continued, we hope to hear about them.

Propagating Lilies.—Mrs. L. Hall, Cumberland Co., N. J. The florists grow them from the scales of the bulb. The outside scales are taken off and stuck in boxes of sand or sandy earth, just as if they were cuttings, the scale being set with the lower end down and about half covered. It is done in a propagating house, where there is a gentle bottom heat. The experiment may be tried in the dwelling and may possibly succeed, though we have never seen it done. A few of the outer scales may be removed without materially injuring the bulb for flowering. The little bulbs require two years to become strong enough to flower.

Plants named.—"C. C. Y. S. R. D." Trenton, N. J. Not a seed at all, but a portion of the seed pod of *Iloneis*, (*Lunaria biennis*)....Irene Cole, White Co., Ind. *Lamium maculatum*. Spotted Deadnettle....C. H. Randall, Worcester Co., Mass., sends *Sedum acre*, Stonecrop, which is in some places used for garden edgings....L. M. Carter, Hendricks Co., Ind. *Celastrus scandens*, Wax-work, or False Bittersweet, already described and figured....G. Frank Alvord, Hampshire Co., Mass. The grass is *Eragrostis pectinacea*, for which we know no common name. It usually grows in sandy places, and is considered as worthless....Philip Ritz, Walla Walla, W. T. The grasses were over ripe when gathered and came in fragments. There appear to be two forms of *Koeleria cristata*, Crested Koeleria. The coarser grass of the three is one we have had several times from the Pacific coast, and think it a variety of *Triticum repens*, or Couch-grass....M. R. Allen, York Co., Me. No. 1. *Pyrola elliptica*, Shin-Leaf. No. 2. Too spoiled a fragment to make out. No. 3. *Erigeron strigosus*, Daisy Fleabane.

"Topping" Apples and Market Fruit.—Putting the best in sight is practised by most tradesmen and fruit dealers are no exception to the rule. "A Citizen" writes us regarding the manner in which he has suffered: "I can testify to the elevated standard of the *Agriculturist* and to the excellent advice it gives to farmers and others producing articles of food for sale, and I am therefore the more surprised that some of our apple growers should practice such deception in putting up their fruit for the market, as may be seen in nine barrels out of ten, particularly this year. I had occasion lately to purchase 75 bbls. of Newtown Pippins for exportation to England, every apple in which had necessarily to be separately handled, and if fit, wrapped in pa-

per; and out of the entire number there were but four barrels where the fruit was as good at bottom and middle as at the top. City men are called 'sharp,' but if a merchant here were to sell his goods falsely packed as some of our Country friends do, they would be called *Cheats*, and deserve the name! If this thing continues, the old title of *honest farmer* will become a misnomer."

If "Citizen" has read the *Agriculturist* for some years he must have noticed that we have reprehended this practice and that in our "Notes and Suggestions" we have many times advised growers to pack fairly. The fault is not so much the farmer's, as that of fruit dealers, who go about the country and buy the fruit in the orchard and pack it themselves. Our correspondent must not give up his faith in farmers without good cause.

Pelargoniums and Amaryllis.—Mrs. M. T. Brett, Worcester Co., Mass. Keep Pelargoniums at rest during the winter in a cool room, and give but little water; a light cellar will do if dry and safe from frost. In early spring, repot and cut them back severely; they will stand any amount of pruning. Amaryllis formosissima should have been taken up for the winter. The blooming of this, as of other bulbs, depends upon its having made a vigorous growth of leaves the year before. Give it a rich and loose soil in planting next spring.

Large Isabella Grapes.—At our Grape Show two years ago, some Isabellas were presented by Mr. E. Fitch, of Cocksackie, N. Y. The grapes were of remarkable size, and as they presented every appearance of fruit unusually developed by ringing, the committee excluded them from competition. This year Mr. Chas. Starr sends us similar specimens from the same vine, with the assurance that no trick had been practised to increase the size of the fruit. He says that one vine out of several thousands has for several years borne these large berries upon a portion of it, while upon the other part only ordinary fruit was produced. It would be interesting to see how far this peculiarity was retained in vines propagated from the large fruiting portion, and the matter throws considerable light upon the great variability presented by the Isabella in different locations.

Yeddo Grape.—T. H. Grayson, C. W. We believe that this failed to fruit the past year. The year before, we saw a partially ripened cluster and it seemed something like the Delaware, with a looser and longer bunch. Our season is probably too short for it.

Book on Grape Culture.—Subscriber, Carlinville, Ill. Fuller's Grape Culturist gives full directions for training and pruning by the arm and spur method. Price \$1.50. See the Book List elsewhere.

Propagating the Dahlia.—J. Bruland, Iowa. If the roots were taken up last autumn and are kept in a dry and warm cellar, you can multiply them in the spring by dividing the root. Our notes for the month will tell how, at the proper time.

Potatoes and Chestnuts.—In answer to numerous inquiries about Mr. Harrison's potatoes, mentioned in December, we state that he informs us that he has no more for sale. Neither have we any of the chestnuts figured in December. We had only a few, and they were disposed of long ago.

A Large Ricinus.—Mr. C. F. Erhard, Hunter's Point, L. I., sent us a stem of *Ricinus sanguineus*, one of the ornamental varieties of the Castor Oil Plant, which measured nearly a foot in circumference at the base; a remarkable growth for an annual plant.

Tomatoes.—"Reader," N. H. A light rich soil, without much fresh manure is best for tomatoes. The plants may be made stocky, when grown in the green-house, by the use of pots and by pinching.

Sugar Beets and Sugar Production.—Dan'l Laniman, Macoupin Co., Ill. Sugar beets grow excellently well upon the prairies, as we have seen. They contain a large percentage of sugar, and after grinding and extracting the juice, the pulp is nearly as valuable for feeding and fattening bees and hogs, as the roots unground. The only trouble is that it will require a capital of about \$100,000 to set up a beet-sugar house and make it pay. Capital invested in this way, if judiciously managed, will, we think, pay a larger profit than in almost any other legitimately managed business with which we are acquainted.

Milk Stools.—Those used by T. F. Haynes, Hartford Co., Conn., are 2 feet 3 inches long, 9 inches high, (probably 8 inches wide), three-legged, with mortice holes in the middle to carry them by. They are

made to hold the pails and so keep them clean, although his cows are littered as well as his horses.

Halsted's Hay-fork Traveller.—Lycurgus Dunnaux, Lawrence Co., Ind., writes that from the description we published on page 212, he had one of Halsted's Hay-fork Travellers made and put in operation, and adds: "The result is, it has inaugurated a new era in lifting and conveying hay in this community. Without specifications for the construction, we could not make all the parts so perfectly as we now can; but it works well enough, so that now the great difficulty is in keeping a supply of hay to pitch; formerly it was to get the hay pitched. A particular excellence is, that a man of light muscle can work the fork, if he has brains enough, just as well as any other."

Lice on Cattle.—W. G. Wardenhall, Jefferson Co., Pa., says, that "knowing *larkepur seed* would destroy lice on human beings, he collected a quart of seed, ground it fine, soaked it a week in one gallon of strong vinegar, and then applied it with a sponge to all parts of the animals; has never seen louse or nit since."

T. F. Haynes, Hartford Co., Conn., writes to the *Agriculturist*: "I keep lice off my cattle by keeping sulphur and salt in winter where they can lick it when they choose; my cattle have had none since I practised this."

Remedy for Warts on Cows' Teats.

—Andrew Burfarst, Lewis Co., N. Y., inquires "what is the best remedy for warts on the teats of a cow?" Warts on cow's teats usually extend no deeper than the skin. They should not be removed while the cow gives milk. The most effectual way is to take hold of the end of a wart with pliers and cut it off with sharp shears. The cut should not be deeper than the skin. This remedy will not hurt a cow as much as clipping the skin does sheep when they are being shorn; or a piece of small wire may be twisted around a large wart sufficiently tight to obstruct the circulation of the blood, and left on till the wart drops off, leaving the surface smooth.

How to Make Manure of Weeds, with no Pigs.—H. M. B., New Haven Co., Conn. Work over your pile of weeds, potato vines, bean vines, lawn trimmings, any thing of the kind, adding a quantity of soil to amount to one-fourth or one-third the weight of the whole. Then let the housemaid pour over it all the chamber ley and wash slops, with the dish water and scraps from the kitchen which you can not profitably dispose of otherwise. The weeds, etc., ought to be cut up with a sharp spade before putting into the heap, and the heap ought to be worked every month or two, except in very cold weather, mixing in some more dirt.

Agricultural Papers.—"Bob Skinfint," (who has chosen a forlorn *nom de plume*) asks us to recommend to him a first rate agricultural paper. (He takes the *Agriculturist*, of course). Take one published in your own State. One who lives in Maine should, by all means, take the *Maine Farmer*, (Augusta) which is a weekly family newspaper, and teaches sound agriculture as well, which, by the way, appears in new type, an evidence of prosperity we are glad to notice. The same is true of three excellent papers published in Boston, the *N. E. Farmer*, *Ploughman* and *Boston Cultivator*. New Yorkers have quite a choice. There is the *Country Gentleman and Cultivator*, (Albany) a quarto-weekly, famous for its excellent correspondence, and eminently the gentleman farmer's paper. Moore's *Rural New-Yorker* (Rochester) is another weekly. It is a family- and news-paper, with a large and good agricultural attachment, in which the American Merinos are of late made a specialty. We might go on and mention the *Ohio Farmer*, (agricultural and family, Cleveland), the *Prairie Farmer*, (agricultural, Chicago), both well managed and first rate of their respective classes, and so in almost every western State, at least one good monthly or weekly paper, which ought to be well sustained by the reading farmers. We have always found that the farmer who reads one agricultural paper will crave more.

Farmer's Scrap-Book.—On the study table of a very studious farmer of Westchester Co., N. Y., we examined a system of keeping and classifying all kinds of information gathered from his reading, which is worth copying. He has numerous sheets of stiff brown paper folded once, for use as port-folios, and considerably larger than large letter paper. In these are numerous other half-sheets. The port-folios or paper-covers have written upon them the various subjects which most demand his interest and attention. For instance, one is probably labeled "Sheep," and in this he places all valuable items about sheep, cut out of newspapers which he does not keep whole for binding, even advertisements, hand-bills, circulars, etc. These are pasted neatly upon

the half-sheets, and at the same time classified still further if possible. Then, also, upon writing paper he makes memoranda of facts, or where to find important articles which he meets with in his reading in books or in journals, which he preserves. In the same way he has a cover devoted to each class of stock, to the prominent classes of fruits, vegetables, and other crops, as "Stone Fruits," "Small Fruits," "Apples and Pears," "Roots," "Indian Corn," "Small Grains," "Grass and Hay," etc., and so has always ready for immediate reference a vast amount of valuable information, which would otherwise not be found when most needed.

Lightning Rod Swindlers.—A Subscriber in Onondaga Co., N. Y., writes strongly of the operations of certain parties, who by plausible statements induce farmers to employ them to put up lightning rods at so much per foot, to be paid in notes. They then contrive to use a great amount of rods, and badger their victims into paying the bills to save further trouble. The notes are sold at the best terms that can be got. In one case \$300 was collected for the rods put on a hog-pen! Over Sixty Thousand dollars have been taken in this way by a single firm of operators. The victims should combine and arrest the swindlers—a collection of the testimony would establish fraud very clearly we think. We have had several good rods put up by professional men, strangers often, but always have had a clear statement and agreement of just what was to be done, and the exact price agreed upon. Twenty-five dollars, and usually a less sum, will pay for ample protection on any ordinary house or barn. If out of business, we would be glad to undertake to supply a thousand dwellings with rods, and warrant them against lightning for ten years, at an average price of twenty dollars each.

Californians, Look out.—We learn that a set of sharpers upon the Isthmus are engaged in selling to passengers "Greenbacks" at a considerable discount. The seller always has a few dollars left, and as he is going where they will be of no use he is willing to sell them for gold at a great sacrifice. Several who have bought in this way, found upon their arrival at New York that they had bought well executed counterfeits.

A New Dodge—Jewelry Swindle.—For some time past, sundry parties have sent out circulars offering chances for large prizes in watches, jewelry, etc., to any one sending 25 cents for a ticket. In return for this they sent prize-tickets offering for \$5, or \$5.24, watches, etc., worth \$25 to \$50, alleging that these tickets were drawn. Of course any one remitting the money would hear nothing further from it, except in some rare cases, where a further and larger swindle was in view. A Brooklyn concern, and we know not how many others, are taking a shorter method to get the \$5.24. Thus: They address the same letter to each of ten thousand or more persons at a distance, enclosing ready drawn Prize Certificates, ostensibly for "Patent Illuminating Case Watches," "known as the Army and Navy Watch, beautifully engraved, patent adjusted balance, warranted a perfect time-keeper, etc., and worth \$50."—Another ticket entitles the holder to a "Gold Vest Chain, the latest and most fashionable style, valued at \$25." The letter accompanying these tickets says: "Your letter with 50 cents enclosed is received, for which we send you two certificates. The amount of \$5.24 for each certificate must be returned with the certificates, within 15 days, etc.," and the article called for by the ticket will be sent by mail or express. Of course, the parties receiving these plausible letters have never sent the 50 cents, but the supposition (too often true) is, that the recipient will consider it a capital mistake in his behalf, and will forward the money to secure the prize intended for some one else. The parties sending these tickets can not be found. They get their letters through the P. O. and pocket the money, until they suspect they are watched, and then hide, and reappear under some new name.

Lotteries Again.—"Yours Sincerely, Thomas Boulton & Co., Box 5713 New York City," though shown up in these columns, are still pestering the people all over the country with their swindling circulars, offering a "private and confidential" good chance for at least \$1200, in the Covington, Ky., Lottery, by sending to them merely \$10 for a ticket sure to draw a prize. They pretend to make this offer to get the influence of the one addressed, who is expected to show his prize money and tell through whom he got it, so as to bring them a large business. This is of course the sheerest lying. They make the same offer to every other man in the same town whose name they can get. Of course no one ever heard from his money after sending it to Box 5713. A great number of Post-masters have sent us samples of these circulars, of which sometimes as many as a hundred or more have come to the same office addressed to as many different parties, but each one is addressed as if he was

the only favored one in the county.—Before this reaches the reader, we hope to have the Police succeed in catching "Yours Sincerely, Thomas Boulton & Co.," or whoever calls for the letters in Box 5713; yet, he knows, none of his dupes will acknowledge their greenness and appear as witnesses, and so he will probably be set at liberty to reappear under some new name and guise. We have had many of these fellows arrested and their business broken up, but often with the above result. The best we can do is to keep on showing them up in the *Agriculturist* as we have for years past. If everybody read this journal, these swindlers would soon be upon short rations. Let us all try to get as many to reading the paper, as possible.

Greasing Boots, etc.—Charles Booth, of Erie Co., O., takes exception to the item on this topic in the December *Agriculturist*. He infers we have not worn cowhide boots, in which he is mistaken. We "grew" up in them on the farm and greased them too much. He says they will become as hard as wood without frequent greasing, which is the case with poorly tanned leather continually exposed to wetting and drying. But we did advise a "surface coat of oil (or grease) when the feet are likely to be exposed to much water," and we might have added a frequent one, but not so heavy as to entirely saturate and close up the pores. Stout boots of well tanned cowhide, with thick bottoms, are the best for those constantly exposed to water or the damp ground, and pretty free application of grease are useful when one works much on wet ground.

Light sandals, that is, rubber shoes with open tops, having only rubber straps across the top of the feet to hold them on, so as to leave the leather open as much as possible, are preferable to full rubbers. Those sitting still, as in writing, for part of the day, will do well to use these, but only while out on the wet ground. In all cases give the perspiration from the feet opportunity to escape. A dry pair of socks in the latter part of the day, especially when sitting down for the evening, or when going out for evening riding, or work, adds greatly to one's comfort and health.—Mr. B. says he finds our mixture of lard and resin an excellent application to boots.

Gunpowder Rendered Harmless.—One of the company of English capitalists, who have been travelling in this country, not long since demonstrated the practical character of a recent English discovery before a company of scientific and practical men, in Jersey City. After taking a quantity of common gunpowder and proving its genuineness, he mixed with it three times its weight of powdered glass. He then thrust a red hot poker into the mixture, which caused it to burn up slowly without the least explosion or harm to anything. The effect of the ground glass is purely mechanical, separating the grains of powder and thus preventing a rapid combustion. Mixed with four times its weight of glass, the powder was burned with great difficulty, those grains only burning which were in direct contact with the poker. By the use of a sieve the powder was again separated, in a condition of efficiency—apparently as good as ever. The value of the invention consists in the prevention of accidental explosion, thus securing personal safety and greatly reducing the cost of storage. Some apprehensions have been expressed that the powder, after being thus mixed with the glass, will foul the guns in which it is used: that nothing is said about this, gives ground for the suspicion that it is true.

Measuring Hay.—There is no rule that will prove at all reliable for measuring fine and coarse, loose and well-packed hay. Some kinds of hay, after being pressed beneath a heavy mow, will weigh a ton per 1000 cubic feet. In a hay loft, it would require 2000 cubic feet of the same kind of hay for one ton.

How much is a Barrel.—"J. M. P." A barrel of cider, vinegar, and wine, molasses, syrup and milk, is 31½ gallons. A barrel must be made to hold 195 lbs. of flour, or 280 lbs. of salt—the latter larger than for flour. Apple barrels are made the size of flour barrels, though salt barrels well cleansed are used for apples, pears and potatoes. Salt barrels hold more than is required of apple barrels. A barrel should contain not less than 2½ bushels of fruit, or vegetables, sealed measure.

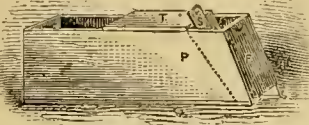
To Keep Rats from Eating Harness.—"Philomen," of Champaign Co., writes: "I have a remedy that has never failed with me. It is simply salting the rats regularly. I do this by laying salt on the sills and ties of the stable, if that is the place they most frequent; but in fact, they will hunt for it. It will occur to any farmer that sees this remedy, that harness is most cut where the greatest amount of sweat has dried, an indication that salt contained in it is what they want."

Tan and Tonn.—J. M. Porter, Ross Co., O. Tan is never properly used to express weight, but in

liquid measure of 252 gallons, and is also used to designate a large cask. Ton is written for quantities by weight. Though both are derived from the same Anglo-Saxon word, the distinction in spelling is a convenient one, and is sanctioned by good usage.

Grain-box for Sheep Feeding.—

Thos. B. Powell, of Ontario Co., N. Y., writes: "Last winter I made a box for feeding grain to sheep, which I like well. It holds about half a bushel, is about 26 inches long on the bottom and 23 on the top; the back end square, the front sloping. The front end has a projection or guide (g,) on the lower end to run in and clear the trough; back of this is a partition or false front (p.) still more slanting, the top of which is 5 inches and the bottom 3 inches from the front. In it, in the middle of the lower part, is cut a hole 2 inches wide and about 3 or four inches high. Over this is a slide (s) for opening or closing the hole. Through the bottom, back of the guide, close to the front, is cut another hole, 2x3 inches in size. About half of the top should be covered, as shown in the sketch. To use it, take it by the back end in one hand, the other holding the slide, and shove it along in the trough opening or closing the slide and raising or lowering the back end as may be needed. For oats the hole may be larger."

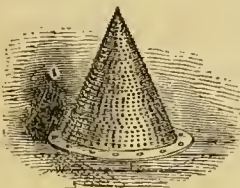


Is there any Good in Corn Cobs?—

"J. W. H."—For our own use we never would grind corn and cobs together. We believe cobs of ripe corn are often productive of bad results; but those of soft corn and nubbins do contain some nutriment and are not so injurious, nor difficult of digestion. There is a vast deal of steam and water power wasted in grinding cobs, but we presume, were the facts known, this would not compare as 1 to 10 with the power wasted in digesting them.

Grain-bin Ventilators.—

Every Grain-bin should have ventilators in the bottom. Those of the style figured are easily made, and put in. A bin 12 feet long and 4 wide, should have three ventilators. They may be made of sheet-iron punched full of small holes, or of fine wire-cloth, bent into a conical form. A sheet of iron is cut into semi-circular pieces, of about two feet radius; the holes are punched; the pieces are run between tinner's rollers and the edges riveted or locked together like stove-pipe. The bottoms are turned to form narrow flanges for nailing them to the floor. Holes are then sawed in the floor and the ventilators nailed over them. It is not necessary to make the holes in more than half the diameter of the ventilators.



Subsoil Plow.—"E. B." Lyon Co., Kansas, inquires where he may obtain one of Mapes' Subsoil Plows? We cannot tell; and if we could we would not recommend such a plow as has formerly been sold by that name. The form of that plow is decidedly objectionable, as it does not raise the subsoil sufficiently high to effect good pulverization. The share is so thin that it runs through the ground, pressing through, and not breaking up its solidity. On page 131 of the *Agriculturist* for 1865 is an illustration of the best form of subsoil plow now in use. The cost is \$10.00 to \$15.00.

How to Catch Horses.—Horses ought to be trained when colts, to be easily caught. When a horse is incorrigibly bad to catch, never turn him loose without a halter headstall on. Then, always carry some oats, roots, meal, salt, sugar, or something else that he likes, and after he has tasted a few times, take hold gently of the halter. Whipping or any harshness immediately after a horse is caught, makes a bad habit worse; but even if hard to catch, reward him when caught.

Stripping.—J. E. Blake's Queries.

"C. C.," of Foxcroft, Me., writes in answer to the queries of Mr. Blake (page 366, December *Agriculturist*) as follows:—I have been a milker for more than forty years, and all that time have noticed that nearly all cows, as the flow of milk abates at the end of the grazing season, fail to yield all the milk continuously to the hand of the milker. If this condition of things is a "habit," allied to vices sometimes observed in cows, I think it one that we shall never see abated. For more than twenty years I have had "a way of my own" to get over the difficulty without any tax on my patience. It is to sit down to paw No. 1 just as though nothing was to happen but a

speedy milking. I draw the milk from all the teats, and when it ceases to flow readily, I move to cow No. 2 and treat her in the same manner. At the end of one or two minutes I return to cow No. 1 and find the milk well down in the udder and ready to be drawn quickly. When done, I find cow No. 2 equally ready to be milked, and thus milk two cows well in less time than one could be by a continuous operation. If but one cow were to be milked I would do something else, after drawing the first milk, and before finishing.... In reply to the other inquiry of J. E. B., I think it best, more agreeable to the cow, as well as easier to the milker, to milk all the teats equally—changing the hands often, so as to relieve the pressure from all parts of the udder evenly.

Farmers' Clubs.—Where the farmers and others interested in the cultivation of the soil, fruit-raising, etc., (and who is not?) can be induced to meet socially (or even formally) for a free discussion of agricultural topics, great good always results to the whole district. There is probably no man in the town who does not think he knows how to do some things better than any body else. Why not get together and each tell his way, his notions, the results of his experiments. If one knows so much now that he is sure he will not learn anything, then it is cruelly selfish for him to stay at home, for he might do a great deal of good; and if one does not know quite so much as that,—then he will get good if he goes. Well managed Farmers' Clubs are rare. The Concord Farmers' Club is one, however, as we judge by hearsay evidence. They circulate a printed programme for this winter's work, (if such pleasant employment may be so called) which gives the name of the member at whose house such meeting is to be held, from Nov. 9th to April 19th, with the subjects for discussion at each meeting, addresses and essays to be presented, etc.

Agricultural Colleges.—We have many inquiries about Agricultural Colleges and must answer them in general terms. The only institutions of this kind in actual operation are those of Pennsylvania and Michigan. Of the former we have had but little knowledge since the death of its former president, Dr. Pugh, and know nothing about it beyond what our readers can learn from a circular, which can be obtained by addressing the President of the College, Center Co., Pa. It happens that we know rather more about the Michigan College, being well acquainted with its president and most of the faculty. We know that it presents unusual facilities to the industrious student, and that it deserves to have a much larger number of students, than it has yet received. Those from other States are admitted, but were the institution properly appreciated by the people of Michigan, there would be no room for the students from abroad. An advertisement of the Michigan College appears this month. For those who desire to delve deeper in the sciences which underlie the principles of good agriculture, the courses of instruction at the Sheffield Scientific School of Yale College, the agricultural department of which has received the "Agricultural College Fund," are unsurpassed. Prof. Geo. J. Brush (New Haven) will respond to requests for information.

A Branch Log-Chain.—The illustration here given represents a very convenient and useful chain for hauling timber or logs on the ground. Each piece is about three feet long, attached to a strong ring of an elliptical form. The other ends are provided with "dogs" of the form shown, which are driven into the sides of a log or stick of timber, when it is to be hauled upon the ground. When a chain is wrapped around a log, it makes the draft much harder than if there were no chain beneath it; besides, when a chain cannot easily be put around the log, as it rests on the ground, a branch chain will be found very convenient. The branch chain may be fastened near the lower side of a log, and thus require less force to haul it, than when one chain is used especially if the hitch is on the upper side of the log.



New York State Cheese Manufacturers' Association.

—The third annual meeting of the New York State Cheese Manufacturers' Association, will be held at the City of Utica, on Wednesday and Thursday, January 10th and 11th, 1866. The number of persons engaged in cheese dairying in New York alone, and who are directly or indirectly connected with the association, is more than 20,000, and it is believed the meeting will be the largest and most interesting that has ever been heretofore held by the farmers of the State on any special branch of industry. Delegations are expected from the Eastern and Western States and from the Canadas, and subjects of vast importance to dairymen are to be discussed and acted upon. The annual address

will be delivered by X. A. Willard, A. M., of Herkimer County, Wednesday Evening, January 10th. Reports from 400 factories, and a large number from private dairies, are expected, of operations the past season, and various subjects of interest to dairymen will be discussed.

To Prevent Horses Slipping Down.

—We have had a horse shoe engraved to show blacksmiths how to "fit up" shoes to prevent horses slipping down on smooth and slippery pavements. The heel calks should be not less than 1½ inches long from the top of the shoe to the end, and instead of being hammered to an edge like an iron wedge, the ends should be fully ¾ of an inch wide and broad as the width of the iron. The toe calks should be much stronger than when they are made only ½ an inch long. A horse shod with such calks will rarely slip on pavement, nor at all on ice.



The Cattle Plague or "Rinderpest."

—Congress has very wisely and promptly passed a law (the first law of the session) forbidding all importation of domestic animals from Europe. It is right. With so great danger threatening us we ought to take the promptest and most efficient measures. It will be no evidence of undue haste in passing this law, if subsequent consideration of the subject should, as it probably will, lead to an establishment of a rigid quarantine, wherever foreign cattle enter the country. The distress and loss occasioned by this terrible "pest," has not been exaggerated. The losses by death being 80 to 90 in 100 of the cattle attacked, and not under the most skillful treatment from the first. Should the plague come here, what we should do as we are without veterinary surgeons, it is easy to foretell—we should stand by and see the stock die in spite of our best efforts. It is well known that this disease effects both neat stock and sheep, hence the word "cattle" in the law doubtless covers both. The act is as follows:

An Act to prevent the spread of foreign diseases among the cattle of the United States.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, that the importation of cattle be, and hereby is, prohibited. And it shall be the duty of the Secretary of the Treasury to make such regulations as will give this law full and immediate effect, and to send copies of them to the proper officers in this country, and to all officers or agents of the United States in foreign countries. Sec. 2. And be it further enacted, that when the President shall give thirty days' notice, by proclamation, that no further danger is to be apprehended from the spread of foreign infectious or contagious diseases among cattle, this law shall be of no force, and cattle may be imported in the same way as before its passage. Passed the House Dec. 11th; the Senate passed it unaltered, and it received the signature of the President December 16th.

Southern Farming—Chances for good Men.

As postal facilities extend over the Southern States, we are constantly in the receipt of letters from our old subscribers and others, which, (however diverse may be the views of the writers in regard to the vexed and important questions of the day, touching the political status of the Southern States and people, of all colors), breathe the same spirit of improved agriculture. We dispute with nobody, who is in favor of better farming. Advancement and improvement in one direction is close akin to that in every other. When we know that the whole South is sprinkled over with such men, anxious, now at least, to try fairly the experiment of more intelligent labor, and of better systems of farming, we can have little anxiety for the future, whatever throes and pains may attend the new birth of half a continent. Surely we will do whatever is in our power to aid men who write such letters as the following, lately received from Charlotte Co., Va.:

"* * * I have unexpectedly been placed in charge of an estate of 3000 acres of fertile land, located as above, and desire to have it cultivated to the best advantage. I have determined to divide it into several farms, and my great need is intelligent and reliable labor and educated and experienced superintendence. The Freedmen are attached to the place, and have warm friendship for their late master, who is so diseased that he cannot attend to his own business; and I am anxious to spare no effort that will benefit them and make them good, orderly and happy citizens. They do not now know their rights or duties and must be instructed in them gradually, and I believe will be most easily informed as to them by seeing honest, industrious and steady laborers from some of the Northern States, working with them or in their vicinity, will learn from them that the interests of employer and employees are identical, and that good order, and a cheerful obedience to lawful orders, are

necessary and not degrading to the employee. I am anxious therefore to employ some 10 to 20 Connecticut Valley laborers, who have been accustomed to the culture of tobacco, to general farm work and care of stock, and also an intelligent man of good character, experienced in the direction of others and who understands the principles and practice of successful farming. I am willing to pay such employees market prices, or give them *finding* and a share of the crops.

"The advantages of soil, climate, healthy location, comfortable buildings, stock and improvements are unsurpassed. We have daily mails by the—R. R., which passes through the estate; ready access to market by this source and by the river; Mills, a country store, blacksmith and carpenter shop on the estate, and schools and churches in the immediate vicinity.

"All this section of country raises fine manufacturing tobacco, which commands a high price; the season is much longer and the climate much more favorable for its culture than in Connecticut. There is a strong desire among many here to see good Northern farmers and laborers come in and settle among us, and if they come, I am convinced that they will soon be much more welcome than the Swedes, Germans and Scotch now being imported. You will much oblige me and I believe much benefit many others, North and South, by calling attention to this part of Virginia. Many fertile tracts—cleared, fenced, stocked, and with good residences and out-buildings, could be bought cheap, or rented for a small sum or part of the crop. Many old owners are unable to conform to the new order of things, have little money and will readily rent it to Northern men, who will have little trouble in getting the freedmen to work."

The South offers few inducements to men of small means, who are not good practical farmers, and pretty well read also in the principles of agriculture; for such the West is better. Neither is the South the place for men who do not like to work. Work is to be the order of the day at the South now, and it will be its salvation.

Agricultural Education.

THE FARMER-BOY'S SCHOOL IN THE FAMILY.

In an article on Agricultural Education in the December number (p. 374) we promised to continue the subject there introduced. The farmer-boy's first teachers are his parents, and his first lessons are from those by whom he is surrounded. Up to the time of his birth, the little fellow usually has less intelligent thought bestowed upon him than would have been given to a thorough-bred animal of any kind. Nevertheless, his physical being is subject to almost identically the same laws, and his constitution and quality as a man are often determined long before any proper educational influences are brought to bear upon his unfolding mind. We believe, also, that his mind and heart are, equally with his physical nature, affected by prenatal conditions. Children know a great deal more than we give them credit for; especially do they perceive our emotions, attempts to deceive them, lack of trust in them, lack of truth, not in words only, but in thoughts. So a child towards whom angry feelings are exercised, who is struck or punished in anger, soon becomes passionate, provoking, "ugly" as we say, and the reverse is equally true—love begets love. The love of nature, fondness for flowers, for plants whose use is beauty, or whose beauty is their usefulness, kindness to animals, etc., if exhibited by those about the child, find in it an immediate response. So, also, may habits of helpfulness and industry be almost in-bred, if with his earliest efforts to do anything he is given to understand that his little powers may be exerted to some use. The love of approbation, if gratified and properly met by expressed approval for all those little attempts to work some good, no matter how little is really wrought, effectually establish the tendency to do with the might what the hands find to do, almost before the little fellow is out of leading strings. Too often this is neglected, and then boys have to be *made* to work and kept at it by the hardest. Nevertheless often they do work well, but it is

for the sake of approbation, or as setting an example to hired men, etc., or to see the work get ahead, and without thought and reason, and so it is not relished and enjoyed as if the mind as well as the body was earnest in the work. The love of nature and all natural things, the habit of carefully observing birds, animals, insects and plants, of watching them in all stages of growth and development, of reasoning upon and discussing intelligently, the questions that continually come up about all these things, if encouraged by books and intelligent interest on the part of the parents, will develop into a love for farming, and for farm work even.

Meanwhile, of course, the boy progresses with his schooling. Any father interested with his son's development will read with him, and get him interested in the subjects which we have already alluded to as coming up on the farm, and so not only teach him about his work, but give him time daily to read, not working him so hard that he will be unfit for mental application.

Above all, the parents should be companions for their children, have their confidence and affection, and to accomplish this, they must be interested in them and what they are taken up with, giving them full time for sports and plays, athletic exercises, rambles in woods and mountains, and especially encouraging them to acquire a minute intimacy with nature in all its manifestations, so far as tastes incline them, but not to the interruption of proper preparation for the business of life. A familiarity with the mechanical arts ought to be early encouraged, fostered by visiting neighboring factories and shops, and by instruction in the use of common joiners, and iron worker's tools. A boy under such home influences, rounds out in his physical and mental being, and is interested in home and the farm to such an extent that he will most likely remain, and if he follows farming, will almost surely succeed. Such an education also is as good a foundation for any subsequent business or professional schooling as he can have.

Top-dressing Meadows in Winter.

A thin dressing of clay put upon a meadow, where the soil is sandy, or a sandy loam, or for the most part muck, and not in a very good state of fertility, will sometimes increase the growth of grass so largely, that a meadow hardly worth mowing will yield three tons of excellent hay per acre. Sometimes when grading has been done, or a new fence is built, the earth is scattered in depressions on the sward near by, and the result almost always is a large increase in the growth of the grass. We have frequently observed bunches, and small patches of tall, heavy grass of a luxuriant growth, near stakes and posts, that had recently been set, a small quantity of the earth having been scattered, when the workman was digging the holes. Taking the hint from these, it is easy to see how teams and laborers may be employed profitably, when there is snow on the ground, or it is too cold to engage in labor that requires warm weather. If a man has a sandy meadow yielding but a small burden of grass, it will pay well to haul clay, or almost any kind of earth half a mile to top-dress such ground. When the sleighing is good, a team will haul two tons at one load with ease. If the soil be of a peaty character, two tons of cold stiff clay spread in the winter over an area of four square rods, will usually produce a maximum result. Should the clay be plowed, or spaded up in large clods, let them be spread on the snow or ground, and

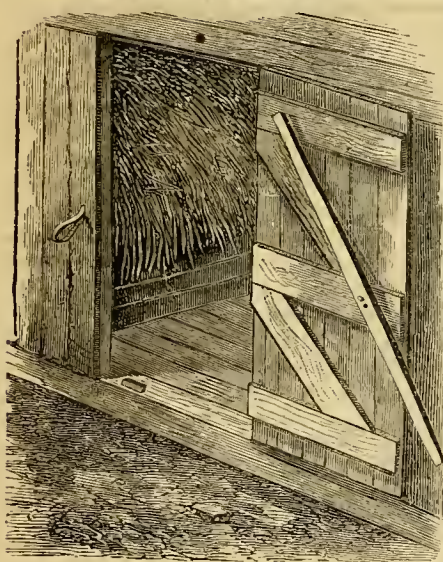
the frost and rain will reduce them to a fine and mellow condition before the growing season commences, so that a little labor with a shovel will cover the entire surface with an excellent top-dressing, the good effect of which will be perceived for several years, in the larger quantity of grass and hay, and in the better quality.

An active man with a good team will haul, on an average, one ton of earth an hour half a mile, when the traveling is such that the team may haul two tons per load. And if half a ton be spread on each square rod, it will require eighty tons to top-dress an acre. The expense of the teams for hauling need not be computed, because they must be kept in winter, whether they work or not, and it will be better for them to labor than to remain idle. Then allowing a man one dollar per day, if he hauls only four loads per day, making eight tons, it will cost ten dollars to top-dress one acre. The grass produced by such a dressing over and above what would have grown in a single season, will ordinarily more than pay all this expense. But, in the winter, when farmers have little to do besides their daily chores, they can work a few hours every day at top-dressing in this manner, and it will cost them even less than we have reckoned, as it will be better for both men and teams to labor moderately, than to remain idle. When there is a preponderance of clay in the soil, sand, or sandy loam, or muck may be hauled instead of clay. The frosts and rains will almost surely reduce it fine before the growing season commences, and it will answer the double purpose of a mulch and fertilizer. When the snow is off the ground on a mild day, the lumps, if there are many, may be broken up and spread by a harrow turned upon its back.

Protecting Implements and Machinery.

It is safe to state that more tools and machinery are used up by rust and exposure to the weather, than by the actual wear and tear of use. Very few tools are thrown aside because they are worn out. Harrows are frequently left with the teeth in the ground all winter, and many people think because the teeth are iron, they are not injured. But the scale of rust that sometimes forms on harrow-teeth destroys more iron during the winter, than is worn off by all the harrowing done in one year. The same is true of plows. How often do we see good plows standing in the furrow all winter! Water not only fills the cracks in the wood, but enters every joint, causing the grain of the timber to expand and then shrink in dry weather, and at length rot, before the plow is worn out, and the formation of a scale of rust on the iron where it comes in contact with the soil, rapidly uses up the iron parts, so that implements, not protected, go to destruction with astonishing rapidity, whether made of wood or metal. If the surface is well painted, water will still find its way into the joints, tenons will decay, and the wood about the mortises will often rot in a few years. Wagon wheels that are allowed to stand in the storms and sunshine, even when well painted, rust out faster than they wear out. Water soaks into joints of the felloes and spokes and between the tires and wood, rusting the iron and destroying the solidity of the structure. This is why wagon tires must be re-set so frequently. More iron will rust off sleigh shoes in one season, when they rest on the ground, even under shelter, than will wear off while running all winter in a snow track. The same is equally true of hoes, shovels, and many other tools.

On a farm properly furnished with cellars and sheds, of course all implements should be kept under cover at all seasons. They ought to be off the ground, the wood-work, except handles of tools, well painted, and the iron-work painted or protected by a simple coating of boiled linseed-oil. But the question may be asked how may a farmer protect his implements and machinery, when he has not suitable buildings which can be appropriated to such a purpose. There are several ways in which it may be done very satisfactorily. The farmer on the prairies with no out-buildings or lumber to make them, can set two rows of posts in the ground, about 16 feet apart, and saw off the tops square about three or four feet high, pin a pole on each row of posts for plates, make rafters of poles, and pin them to the plates, and split out thin rails and pin them to the rafters about one foot apart, then cover the whole with straw two feet thick. The straw should be spread on very evenly, and after it has settled down and the surface is wet, raked lightly so as to turn all the straws on the surface down, to carry off the rain. The rafters should have about "one-third pitch." This will be sufficiently steep to carry off all the rain. By nailing or pinning thin rails, like collar beams, from one rafter to another, and making a straw floor, an excellent warm apartment may be made for fowls of any kind. Even geese and ducks will ascend to it, on an inclined plane. Such a frame may also be covered with fence boards, or saw-log slabs, and subserve an excellent purpose for protecting tools. If it should not carry off every drop of rain, it need not be denounced. It is the drying wind and sunshine, not rain alone, that injures implements.



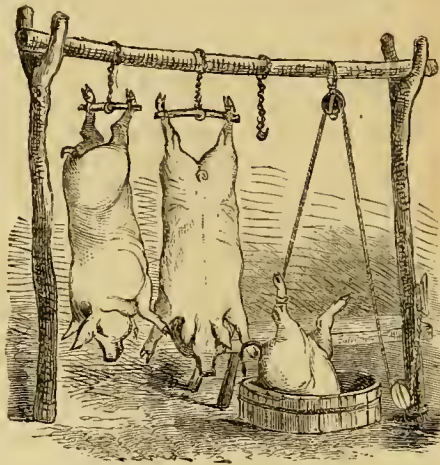
Suspended Bar for Barn-doors.

Large barn-doors are usually fastened to a perpendicular bar one end of which enters a mortise in the beam over head and the other a mortise in the floor. The strength of a man is generally required to take out the bar, or put it up. Our illustration shows a more convenient way to manage the cross-bar. A round iron bolt holds the bar to the middle rail of the door, allowing it to turn freely either way. Two long gains, one in the floor and the other in the beam above the doors, receive the ends of the bar when the door supporting the bar is closed. In lieu of a gain in the beam over head, a strip of scantling is pinned firmly to the under side of the beam, and the upper end of the cross-bar when set erect, comes on the inside of the strip.

Killing and Scalding Hogs.

J. Comfort, writing from Cumberland Co., Pa., gives his process of killing and scalding hogs, which has much to recommend it, as follows:

"I have frequently thought of writing a word on the easiest, quickest and most humane manner of slaughtering hogs. I take any kind of



SCALDING HOGS.

gun that will go "loose," load with, say one third charge of powder and a *plug of hard wood*, about an inch long and the thickness of the ramrod. This I shoot directly into the centre of the forehead of the hog, and he drops at once. The head is not injured, as to meat; there is no danger of the hog biting you. You have no hard tugging and lifting to catch and throw them, both of which are hard and dangerous work, and the hogs will bleed out better, as the nervous system receives so sudden a shock, that they are not able to draw the blood into the lungs, in case the wind-pipe should be cut in sticking. It is easy to picture laying hogs on their backs, but try it one year and try shooting next, and my word for it, your pen will ever afterward be free from squealing on butchering day.

"Now as to our method of scalding hogs. We set two posts about twelve feet long, including two feet in the ground, and about twelve feet apart, and connect them by a beam on top. Under this beam, and near one post, I sink an ordinary half-hogshead in the ground, and place a pulley on the beam directly over it, and another pulley on the side and near the bottom of the adjacent post. A rope is passed through these and attached to the hog's hind leg, and then he may be easily hauled up and dropped into the tub, then taken out to air and clean; and lastly he may be hoisted up and hooked on to the beam by chains to hang. Such beams may be arranged to hang as many hogs as you may wish to slay. A common barrel kettle kept boiling will keep the water in the scalding tub hot enough, by adding hot and taking out cold, to continue scalding an indefinite time; all with little cost, little fuel, little lifting, and the killing with little suffering to the animal. All things considered, this is the best mode I ever saw or used for killing and scalding hogs."

Western Agriculture.

J. Welton, writing from Winnebago Co., Ill., some months since, says: "When I read '*Western Boy's*'' dashing averments in July *American Agriculturist* of their doings in LaSalle Co., I noticed he failed to tell anything

about the amount of their products per acre in that section of our prolific State. The remarks of 'C. S. W.', of Iowa, in your August number are so important, frank and truthful, that I would offer a few in the same spirit.

"I am constrained to say, that a moiety of the farming operations in Northern Illinois are by far more slovenly and unproductive, than I ever noticed in other Northern States, though our natural resources greatly surpass most of them. Thirty years ago I visited on the banks of the Illinois river, and travelled more or less in LaSalle and Putnam counties. There the weeds were so abundant in some places as to prevent one on horseback, from seeing an ox, when within a few rods, but the pioneers there know how to produce very large ears of corn. Four years since I was again travelling near the Illinois river, in Putnam county, passing an extensive corn-field, in which stalks and weeds appeared much more abundant than ears. I asked three men, who were cutting up and putting it into stooks: 'How much more than twenty bushels to the acre will this field of corn average?' The ready response was: 'That it would fall short of that by more than one half,' with which I fully coincided.

"I have for many years regarded Indian corn as preeminently the Western Farmer's crop, and it will be difficult to find anywhere a soil and climate better adapted to the profitable growth of the stalwart plant, than that of our whole State, and yet, I am fully persuaded, that the two most northerly counties, through which Rock River runs, have not, for the last eighteen years, averaged 25 bushels or even 20 bushels of merchantable corn per acre, counting all the lands each year, that have been planted in corn, though in that time it may have averaged fifty bushel basketfuls of ears and nubbins. Nevertheless, I firmly believe, before ten years shall have elapsed, that all our well-to-do farmers, instead of being satisfied with thirty or forty bushels per acre, will not then publish about their success in corn growing, if it falls short of seventy bushels, and that then more Illinois farmers will tell how much their corn crop exceeded eighty, than can now boast of growing over forty bushels per acre, and that then, instead as now, of growing the smaller varieties, so as to escape a killing frost, they will grow the larger kinds of dent corn, and have their whole fields out of the reach of killing frosts before the 12th of September, whether the seasons may prove wet or dry. Of course, the above assumptions becoming established facts before ten years have passed, most Illinois farmers will have abandoned growing wheat at the rate of from three to thirteen bushels per acre, to send 4000 miles, to exchange for the light fabrics of foreign shops. Therefore:

"Let Illinoisans, whose lands abound in clay subsoils, plow them in the fall not less than eight or nine inches deep, while the ground is warm enough to cause the weed seeds to germinate. Select the eight-rowed corn as early as the first week in September, and by all means (not objecting to have it kiln dried) have it dry, cob and all before any frost can reach it. If such corn ground be prepared in spring and the seed drilled in in good time and in the best manner, rolling the ground if need be, and harrowing and cultivating it sufficiently, with good implements, not using a hoe at all, the farmers may rationally hope to gather more than twice the usual average crop of sound corn, provided always they succeed in having only just a proper number of plants to a given area."

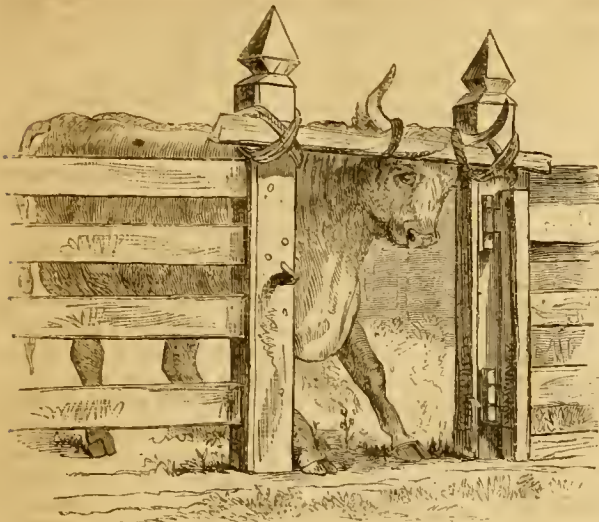


Fig. 1.—METHOD OF HOLDING AN ANIMAL.

Wooden Horn Knobs—How Put on.

The ends of the horns of some cows and oxen are so pointed, that unless mounted with knobs, serious wounds are easily inflicted. We have seen the flesh of neat cattle laid open several inches in length by pugnacious bullocks, and horses and colts with dangerous and even fatal wounds given by the horn of some hooking beast. The small brass knobs which are screwed on the horns, are worth but little, as they are too small. In order effectually to prevent injury, the balls should be as large as a man's fist. Moreover, when vicious cattle have such large knobs on their horns, they will soon get completely over their propensity to hook, and large and small will herd peaceably in a small yard, where it would be dangerous to keep them, were there no knobs on their horns.



Fig. 2.—KNOB.

We once owned a hooking cow with long, sharp-pointed horns, that was a terror to every other animal in the yard, until large knobs were put on her horns, when she shortly became peaceable and harmless as a lamb, permitting small cattle, that once trembled with fear when a rod distant, to feed close by her side. We have been long accustomed to use large wooden knobs, for the horns of every animal more than one year old, if the horns had attained sufficient growth to admit of boring a gimblet hole near the small end, without entering the quick. In the horns of some cattle the quick extends to within half an inch of the tips, until they are, perhaps, two years of age, and the horns of some cows and oxen may be bored, without touching the quick, three inches or more below the ends. To make these knobs, select a few well seasoned, sound sticks of some tough wood, which will not split easily, like yellow locust, iron wood (or horn-beam,) river beech, or pepperidge. A piece two feet and a half long and 4 inches thick in the clear, will make six knobs, 4 inches in diameter and 4½ inches long. They should be shaped like fig. 2, above, and an expert wood-turner will get them out in a few minutes at a



Fig. 3.—REAMER.

which has strong posts. Ream out the holes to fit the horns well. Then crowd on the balls, mark each horn on both sides with a square-pointed awl, and, removing the balls, bore the horns half-way through from each side, using a small gimlet having a sharp screw. Use pins of No. 11 or 12 steel wire, 3 inches long, filed to round points. The holes in the horns should be bored "drawing" to keep the knobs from working loose—that is, they should have the effect to spring the pin down in the middle, but not more than one-fourth of its diameter. When the holes are so bored, the pins must be driven in with some force. To do this, a heavy sledge hammer, or stone weighing 20 or 30 pounds, should be held against the knob to pre-



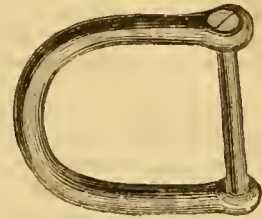
Fig. 4.—WOODEN KNOBS ON CATTLE.

vent all jarring, as cattle are extremely sensitive to any blow upon their horns. Drive each pin about a quarter of an inch beneath the surface.

The Best Ring for a Bull.

The ring we here illustrate is far superior to the circular rings in common use. The circular part is placed in the nose and a strong strap is attached to the straight cross-piece. The ring should be about two inches in diameter, made of ¾" iron bent into a bow, or U shape. In one end of the U, an eye is made, through which a steel bolt passes, having a screw head, and screwing through the other end of the U, in which a thread is cut. The circular portion should be finished perfectly smooth, so as to cause no irritation to the nose of the animal.

The best way to insert the ring is, to lash the head of the bull to a strong post, or to a bar between two trees, or strong posts, as shown in another column. Then make a puncture with a white-hot, pointed iron as large as the ring, by thrusting it through the *septum*, or wall between the nostrils, and drawing it out again instantaneously. It will be easier for some, to use a large leather punch, or even an awl, to make the hole. Then insert the ring, screw in the bolt, which should turn in hard, with the strap attached. The strap ought to be of the toughest harness leather and the flap riveted, and sewed besides.



BULL RING.

For the American Agriculturist.

How To Raise Turkeys.

"In the first place, select a good kind. The autumn or early in winter is the most favorable time for that—just before the birds are sent to market. Keep them well during the winter; make pets of them if you like. Mine eat from my hand, and answer to my call. In the spring, a few days before they begin to lay (which is about two weeks after moulting), put them in an enclosure, where it is most desirable to have their nests, and where they can not get out. After they have made their nests, they may be set at liberty without any fear of roaming or straying. Next, take good care of the eggs. They should be gathered carefully every day, and placed between layers of flannel or cotton, in a place of uniformly cool temperature, and turned over every day. In spring, after the turkeys begin to lay, it is often cold enough to freeze the ground, when, if the eggs are suffered to lie out, they will become chilled, and will not hatch. In warm weather, it is not so necessary to protect the eggs. As soon as the birds are hatched, feed them warm bread and milk, well peppered, with boiled eggs added; or with lopped milk, thickened with cooked corn meal, or canaille (wheat middlings) which is better. A little care in these matters will repay all efforts. Before I knew how to take care of the eggs, I set 30 eggs one year, and but one of them hatched! The next year I set 40 eggs, and nearly all of them hatched, and the birds lived. At present prices, raising poultry is a much more pleasant and easy occupation than the slavish drudgery of making butter and cheese. At least such is the opinion of a Cayuga Co. FARMER'S WIFE."

Light Stables for all but Fattening Animals.

Light is as essential to the healthiness of the eye, as good food is for the stomach. Light strengthens the eye. Darkness, and especially sudden changes from darkness to light, tend to weaken the vision of both men and animals. When a horse is taken from a dark stable, he walks as if he were blind, and the light that meets his eyes appears to cause pain. Every stable should have glass windows, wherever the climate is too cold to admit of open windows. When it is not convenient to have a glass window in the walls, panes of glass may be fitted to holes sawed in the door; or a sash containing a single row of panes may be set in

a frame over the door. When stock stand in their stalls facing a barn-floor or large feed-room, if their mangers are not boarded up tight, light may be admitted through windows above, or in the barn-doors. But if they stand with their heads to the wall, light may enter at any part of the stable, except in front of them. Farmers often saw round holes through the boards of frame stables before each horse, which are closed by slides, and these allow pure air to enter as well as light. This is a poor plan, but better than nothing. There should be windows at the ends or rear, enough to make the whole stable as light as a family sitting room. They should be capable of being opened for free air in summer, and situated so that draughts of air will not fall upon the bodies or legs of the animals, but circulate above their backs. Perfect ventilation must be otherwise obtained, when the weather is so cold that the windows must be closed. When window glass has been broken out, wooden panes are often inserted, and cobwebs and dust too frequently intercept the light. For the benefit of the eyes of all animals, stable windows should be well glazed and frequently washed. Most of the stables in the country are not provided with suitable windows, while a large proportion have none at all, the stables being almost as dark as midnight. Light and sunshine in winter are essential to healthy vital action of all our animals. But the desirable quiet of fattening animals is better attained in dark apartments, and no perceptible bad effect upon their health is noticed in the few months of stall feeding, which usually precede their sale for slaughter.

The Best Horse Stable.

The best for us and for our horses, is the best we can afford. If one can do no better by his horses than to give them an open shed, then of course the open shed is the best stable his horses can have. So if we can not all afford the *very* best, yet if we know what that is we shall come nearer to it, with what means we have.

It is probable that a horse will take more comfort and do better in a box stall, or "loose box" 10 feet square, (10 x 8 will do very well,) than in any other stall. The floor of such a stall, if made of 3 x 4 joists set edgewise, $\frac{1}{4}$ of an inch apart, and level, over a grouted and cemented floor, inclining toward a drain to carry off the urine, will always be dry, and if covered with a foot of straw will be very soft and comfortable. The droppings may easily be removed with a fork. There should be abundant light, free ventilation, and a feeding box and manger. The manger ought to extend from the floor about 3 feet high, having tight sides, the top protected by an iron rail, or one of wood bound with iron, being two feet from the head of the stall; the front side should be set in 6 inches at the bottom, that is, be 18 inches from the head of the stall. Inside the manger a tight false bottom, 1 foot from the floor, should be placed. This box is to hold dry fodder, and there should be an iron follower (to lie on the hay) 3 feet long and 14 inches wide, made of two rods of half-inch iron, the one toward the front turned at each end, so as to form with the other piece a parallelogram, of the length and width named. There should be two cross-pieces welded in a foot apart, and the ends should extend towards the rear six inches, and each form a hook, by which the follower may be hung on the back of the manger box. There should be an opening at the bottom at one end of the

manger, so as to sweep it out easily. Between this and one side of the stall should be set a box for grain and cut feed, capable of holding about a bushel. This should be at the same level with the top of the manger, and may well be of the same width, and about 1 foot in length, and 1 foot deep, the front and rear sides sloping toward the centre a little. To prevent the horse throwing his feed out, a single rod of iron may be hinged to the back of the feed box to fall across it and rest in a slot in the front. The manger and feed box should be made of 2-inch oak stuff and very strong. There may be, also, an arrangement for feeding without entering the stall, and for a breeding mare it is quite an advantage to have an outside door open into a small yard, where in comfortable weather she can move about and take an airing at pleasure.

Feeding Grain to Stock Profitably.

There is a class of farmers, and perhaps some among them read the *American Agriculturist*, who still question whether it will pay to feed animals the grain which they themselves raise. They have not satisfied themselves by their own experience in making beef, mutton, or pork. If grain be properly fed to animals of a good breed, there is no doubt about its being usually a paying operation; but fed out unground and irregularly, if the animals are ever so good, it seldom pays. There is a difference, also, in the manner of computing the gains which usually accrue from the grain consumed by animals. A good portion of the profits of converting grain into meat of any kind, cannot be realized by the sale of the meat; for many times an animal will not sell for as much money as the grain and hay it has consumed while fattening. In view of this fact alone, feeding grain appears to be a poor practice. Nevertheless, multitudes of the best farmers of our country sell but little grain, others sell none at all, while many purchase much more than they raise on their own land, and feed it all to stock of some kind, and yet derive a paying profit from the business. Others attempt it and fail because they feed poor stock, not well purchased nor selected, or because they do not feed with proper system, nor preserve with sufficient care the solid and liquid manure of the fattening animals. In fact, it is in the manure *alone* that the greater part of the profit of fattening beef, sheep and swine consists, to most of the farmers of the United States, and the rest of the *civilized* world. The more manure, and the better saved, the greater the profit, even in Illinois.

The way to begin is, to get good animals and to put them in fair order on grass. Meat can be made on grass in warm weather more economically than on any other feed. Those persons who attempt to make beef of poor cows and bullocks, or mutton of poor sheep, by feeding hay and grain, without commencing on grass, will never make out well.

When one intends to prepare a lot of bullocks or sheep for marketing in the spring, he should commence feeding a small quantity of grain per head as soon as grass begins to fail, for in passing from grass to hay, they should not be allowed to lose any of the flesh or fat that has accumulated during the grazing season. If by irregularity of feeding, or by exposure to storms, or by short allowances of feed, an animal is required to use up a pound of fat to maintain the heat and to supply the natural wastes of the body, it will take several days to replace the small amount that has been lost

by this bad management. Every animal should be fed enough to keep it improving a little *every day*. Some bullocks require more meal than others, and the same is true of sheep. A dry cow, or a bullock three or four years old, designed for beef next May or June, should receive not less than two quarts of Indian corn meal, or its equivalent in some other grain, during the months of December and January. After this, the quantity may be increased at pleasure, and should always be increased from month to month, according to the feeding capacity of the animal, the calculation being to finish off the fattening with ten to twenty days grazing, without reducing the quantity of grain. In addition to this amount of meal, they should have a foddering of hay, once daily, and one of cornstalks, and a few hours daily in a yard with access to good straw. If a farmer has a power cutter, it is far more economical to chaff the hay, straw and cornstalks, wet it, and mingle the meal with it. Feed prepared in this manner, is better for sheep as well as neat cattle and horses. The use of oil-meal for beef animals must be regulated on the same principles, as a substitute for part of the meal. Wethers and dry ewes should receive nearly or quite one pound of Indian corn or corn meal per head daily, or what is better, half a pound of oil meal and half a pound of corn or of barley meal mixed. It is folly to attempt to make meat in cold weather, without complete protection from cold and wet.

A Needed Reform and its Profitable Practice.

A correspondent in Rhode Island, whose good common sense in farming matters leads him into uncommon good practices, gives us an account of his procedure in a matter in which reform among farmers is especially needed, not only for their own comfort, but for the profit of all whose lands will not be injured by enrichment. Alluding to the well known fact, that the agriculture of the Chinese differs from ours essentially in their employing few or no beasts of labor, and hence, being deprived of their manure, the people economize with care and collect from every source the material which we so much neglect under the name of "night-soil," he says:

"I sympathize with Liebig's Chinaman who applies to each guest for a fertilizing souvenir. That is, I respect the latent motive, the manifestation of which is open to criticism. But how can we judge severely the taste of our antipodes in their most necessary economy, or say, that is made public which should be hidden, when notoriously our own country and village privies are so indelicately conspicuous. I came into the management of such a one a few years ago. No one could enter it without being exposed to the view of passing travellers. Other circumstances combined to render it about as unmanageable a nuisance as could be contrived. I resolved to move it, and a shaded angle formed by carriage house and wood-shed, which stood at right angles to each other, touching at the corners, seemed the most desirable place for it. The buildings were under-pinned at this point about three feet high, making two sides of the vault all above ground. A few bricks made another side, and the back was closed by a light, flat stone, easily movable. Having cut an opening in the carriage room of the size of the front of the privy, it was moved to its place, and then an entry was partitioned off in the carriage house, opening out-side, and large enough to hold a bin that would contain a cartload of *peat*. In

this bin there ever lies a most vigilant dipper, always ready to smother any vagrant gases with the fine peat. No extraordinary quantity of fluid is carried thither; the tide of broken glass and crockery is turned in another direction also—in spite of Biddy's ejaculations that she had always thrown it there 'in the best of families.' The wood and sifted coal-ashes, are deposited in the vault as fast as made, taking care that they have ample time to cool. 'That's all wrong, say you—ashes and manure? Chemical heresy, so far as agricultural economy is concerned!' Wait a bit—you forgot the peat. Make a bed of peat, for the ashes and manure, covering with the same, and their disposition to quarrel will only redound to your benefit, as it but wears upon the bed-clothes. I felt sensitive on the same point once, but have grown callous. I offset defective science with the green peas I get in May from the use of the mixture. And the cleaning of the building every spring or fall, is a tidy job—a \$55 job—(11 barrels worth \$5 each, as I reckon it, makes \$55). In place of the annual ton of guano, I have a mass of manure with an earthy and ashy odor—'nothing to offend the most refined tastes'—as the small bills say; I usually do this work myself."

Our correspondent entertains too strict notions of chemical orthodoxy, and is too much inclined to make himself out a heretic. Chemical teachings are against mingling alkaline substances, like ashes or lime with manures containing ammonia. Fresh manure does not contain much, if any, and the ashes produce a most excellent decomposing effect, especially as modified and regulated by the peat. Were it not for abundant peat and moisture, however, ammonia would be constantly, though gradually, escaping. The subject of "Earth Closets" is being mooted in England with good effect, and it ought to be known that the use of dry loamy or clayey soil, instead of peat, will answer an excellent purpose, perhaps as good as peat or swamp muck.

Look ahead—What will the New Year Bring?

As farmers, throughout the country, we are very prosperous. All products of the farm bring high prices and meet with very ready sale. Will this state of things continue? Nobody can tell; a few financial blunders on the part of the Government, perhaps a single one might change the whole aspect of the nation from one of business prosperity to one of panic and distress. As tillers of the soil we should be ready for any emergency, providing in advance for what we are most to need in the sowing and growing season, whether it be labor, or manure, or both. Over a large section, the productiveness of the land, and hence the prosperity of the farmers for the season, depends almost wholly on labor. The farmers are prosperous in proportion to the amount of land they can plow, and plant, and cultivate, if they only have favorable seasons and herds, to harvest and consume their crops. With them, *looking ahead* is securing labor and implements beforehand, taking good care of their stock of all kinds, or looking out for more, and too often it is only this. There are other years after 1866 to be looked out for, and every means which intelligent culture, of both mind and soil, can bring to bear, to increase the crops upon the cultivated surface should be employed—for thus the cost of their production is greatly cheapened, and corresponding profits realized.

It is to make one acre equal to two or three that we husband manure, saving all the leachings, and all liquids; that we plow deep, and subsoil, and drain, and get out the stones. And to make the corn, the hay, and roots, and stalks go farther, we house our cattle, and other stock, and keep them warm with clap-boards or shingles instead of extra fodder. Thus many a ten acres, with good buildings and good planning, and management, is equal to forty, or even a hundred acres in actual profit.

Look ahead, then. Let us plan for what is as certain as the world, namely Seed-time and Harvest, for securing good labor of all kinds, the best implements, that the labor may be most advantageously expended, plenty of manure, as "muck is money," and for a full stock of cattle, great and small. Let us get ahead with all work that can be done in winter, before spring comes with its multifarious toils, looking out for seeds, for all kinds of repairing, and putting tools in order for work, for whatever will expedite work, or make it tell better, or result in more of good. Thus shall we prepare for the unknown future, and be ready to profit by the favors, or meet the reverses of fortune, which we can not control, but may provide against.

Bidwell Brothers' Experience in Bee-keeping the Past Season.

Our aim in the past season was to get our bees into frame hives, and Italianized, and to secure the largest possible amount of surplus honey.

Advantages of Frame Hives.—In frame hives with straight combs the bees are completely under our control. If one stock is in need of a queen, bees, bee-bread, or honey, it can be supplied from one having an excess, and the condition of both be improved; a large gain can be made in this way. In swarming, a comb from the old hive containing honey and brood can be given to the new swarm, keeping them from flying away and giving them a good start. We are confident that at least one-fourth of all natural swarms in this State, usually the largest and best, fly off and are lost. Drone combs may be removed and worker comb given instead, thereby increasing the yield one-fourth.

To avoid the raising of black drones, early last spring, we removed the frames, containing drone comb from 25 stocks, and 20 which were not used in raising Italian queens, yielded nearly one-third more than an equal number with drones. Indeed, all stocks that contain a large proportion of drones, yield comparatively very little, or often nothing. At the commencement of the season we had 204 stocks—97 of which were in the Langstroth frame hive; 66 were in square "Quinby" hives. Early in the season we made one new swarm out of two old ones, as follows: After driving out the queen with a majority of the bees, we placed them in a frame hive on the stand of the old one, and removed the parent stock to the stand of another stock which was removed to a new place. After 20 days, if the stock last removed had become populous and the season was fair, if it was in a frame hive, we swarmed it, leaving the new one on the stand, placing the old one in place of the one previously swarmed, removing that away. If in a board or straw hive we drove out all the bees for a new stock, and where the combs in the old board or straw hives were straight worker combs, we cut them a trifle larger than the frames and crowded them in and gave them to the new swarm. The balance of the old combs containing honey, we strained by breaking them

up and placing them in a willow basket which we set over a barrel and left until all the honey ran out. The usual method of rendering honey by heat ought to be discarded. The scraps of wax we placed in a gunny sack and immersed them in a kettle of water under which we kept a fire until we thought the wax was all out, when we let the fire go down; and when the wax upon top had cooled, we removed it in a solid cake. As soon as the new swarms were full and populous, we placed on our honey boxes, which are tight open bottom boxes, six inches high and wide, and eight inches long, holding when full about 10 lbs. Four of these just cover our hives, each of which we place over four one-inch holes two inches apart, on the honey board. If the queen has plenty of room for laying, we remove the honey board and place the boxes on the frames. To enable us to ascertain when the boxes are full, we bore an inch hole in one side of each, over which, inside the box, we place a small bit of glass, secured with tacks. When a box is filled with honey, we invert it and place over it a pane of glass cut to fit, and have a box that will ship to any part of the country, and thus secure the largest price in places where honey is scarcest. When the box is emptied, the purchaser has a box of some practical value for other purposes.

The advantages to the bees are: they can better secure their combs, are not disturbed as in glass boxes by the heat of the day or coolness of the night, will go up into them earlier in the season and remain later. We are satisfied our bees will make much more honey in them than in boxes the sides of which are glass. After our boxes were nearly filled, in the case of populous stocks, we raised up the honey boards with the boxes, under which and over the hive we placed large boxes without top or bottom containing empty frames. In these the largest possible amount of honey can be stored, which will be of the best quality and may be sold in bulk or by the single frame. Having become confident that drones were the great cause of a portion of our stocks refusing to work in boxes, we resolved to remove all the drone combs from our hives and wishing to remove all our black queens, being satisfied one Italian stock was worth two black ones, we removed all the combs out of every hive, transferring them into clean hives, and also taking away all crooked combs. We thus reduced the number of our stocks from 401 to 256, giving each an Italian queen and killing all black queens.

Bees have generally done poorly in our State this season on account of wet weather. Our statement for this year is as follows: At the beginning of the season we had

97 swarms black bees in frame hives @ \$12.....	\$1,164
66 " " " " " board " @ \$8.....	528
41 " " " " " straw " @ \$9.....	328
204	\$2,020
One year's interest at 10 per cent on value bees....	202
" " " " " " " " " " " hives and apparatus 120	\$2,342

At the close of the season the account stands:	
7,021 lbs. honey sold in frames @ 25c.....	\$1,755 25
3,117 " " " " " boxes, composed of dark and unsealed honey @ 25c.....	761 91
2,980 lbs. on hand in boxes @ 30c.....	894 00
810 " strained honey, 2d quality @ 22c.....	178 00
1,419 " " " 1st " @ 25c.....	354 75
15,347 lbs.	\$3,889 11
252 lbs. wax @ 35c.....	88 20
256 swarms Italian bees worth.....	5,120 00
Deducting above amount.....	\$9,107 31
Leaves profit.....	\$6,865 31

[The above article by our very practical correspondents, Bidwell Brothers, of Minnesota, answers many questions which have been recently propounded to us, in regard to the value of the Italians, of frame hives, etc.—EDS.]

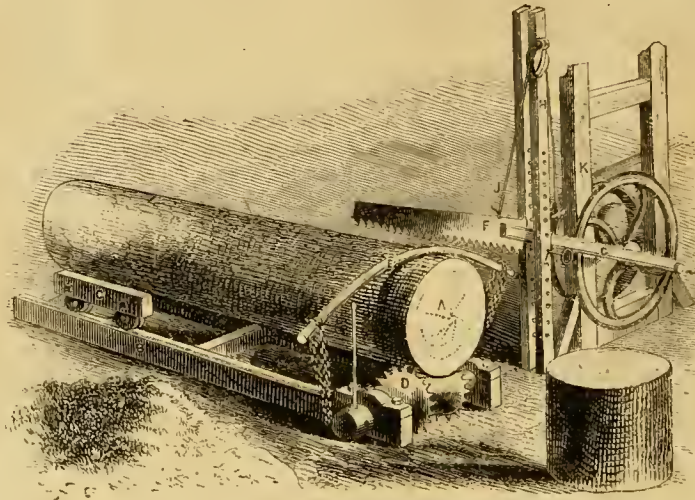
Drag-Saw Machinery.

Some of the subscribers of the *Agriculturist* have inquired for information concerning fixtures for sawing logs into short cuts for wood, staves, wagon spokes, and other purposes. We have engraved a representation of a drag-saw and carriage, with a log resting on it, which a mechanic of ordinary ability will be able to make by the description herewith given. We give the dimensions of one which we used for several years. The sills (*B*) are 14 feet long, 3 x 3 inches square, united by three cross-ties, 4 feet long, framed into them. It is not necessary to make the sills any larger, as the frame may be placed on two planks laid lengthwise, flat on the ground, and thus serve as good purpose as heavier timber, which would make a heavy frame to handle. *D* is the wooden windlass-roller placed at one end, turning freely in wooden boxes bolted to the sills. Upon one end of this roller there should be a head 8 inches long, and of the same diameter. The bearing near the head should be about 5 inches in diameter, while that at the other end may be 4 inches. The middle part of the roller should be made 10 inches in diameter, and cut out in the middle, as shown in the illustration. On the crowns of the bilges thus made, there are two rows of strong sharp-pointed spikes standing like cog-teeth, inserted at right angles to the roller. They extend about one inch above the surface, and enter the log (*A*) as it rests on their points. *C* is a carriage for holding one end of the log, which should be made to run close up to the roller, so that a log only two feet long may rest on both. The log is kept from rocking by the stiff binding pole (*E*). The pitman (*G*) works on a wrist-pin in the arm of a wheel, or by a crank. Two posts (*H*) are set in the ground, or in a sill staked firmly down. A rope is attached to the pitman (*G*) and passed over a pulley, and by means of it the saw can be raised when in motion. The other end of the rope is fastened to the post, so that the saw cannot drop to the ground after it has cut a log entirely off. A log twice the length of the sills may be rolled on, when, by working the windlass roller, it may be carried endwise in either direction. When the but-end of the log is sawed off, so that the portion behind the truck is the lightest, the end must be raised up and the carriage run back to the end of the sills. In sawing a piece of a log only a few feet in length, it is better not to saw the cuts entirely off, as it can be held more firmly while sawing the last one.

The pitman is sometimes attached to a wheel on the side of a tread horse power, and the saw is bolted to the other end, and this works well. Still, some persons prefer to have one end of the pitman attached to a cross-head, playing on a horizontal way, with another pitman bolted to the saw and attached to the cross-head. With the first arrangement, the saw is worked with a rocking motion, as if used by two men; while with the latter, the saw is driven directly back and forth. When a drag-saw is driven by a sweep power, the pitman must be attached to an iron balance wheel, on a strong frame firmly braced. The wheel should make not less than one hundred revolutions per minute, though one hundred and fifty is none too fast.

Drag-saws, sometimes called "butting" saws,

are made expressly for this kind of sawing. But a light saw-mill-saw, if properly filed, will work well. We once used a small saw-mill-saw worked by a two-horse tread power, which cut off logs of hard wood 26 inches in diameter, in 70 seconds, when driven at ordinary speed.

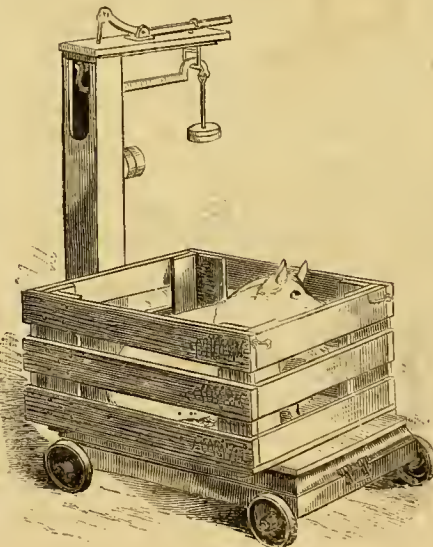


DRAG-SAW AND CARRIAGE.

A good drag-saw is a great labor-saving machine, as large logs, 30 or more feet long, may be worked up by horse power at very much less expense, than the work can be done by hand.

Sundry Uses for Portable Scales.

On every good sized farm there is very frequent use for large scales of some sort, and none are so convenient and capable of so many applications as the better forms of platform scales. These when possessed are usually appropriated to few purposes comparatively, for lack of thought. Scales marked to weigh 600 lbs., may be employed to weigh advantageously sheep and swine, and even light cattle and horses.



PLATFORM SCALES.

Our illustration shows how a light platform supporting a pen, may be placed upon a pair of scales. The pen is in four pieces, each made of three boards, or rails, and two uprights or posts. Tenons from the latter enter the platform, and the different parts of the pen are kept together by hooks above, as shown. On a platform scale thus provided a single hog or sheep, or several may be conveniently weighed, sheep more easily than if, with their legs tied, they were laid upon the scales. When a horse or cow is to be

weighed, block the wheels; lay on a wide plank, or broader platform, of sufficient length, for the animal to stand upon, supported so that while it is free to move up and down with the scales, it cannot tip more than half an inch, when an animal steps on either end. Then

make a temporary floor of plank around the scales, so that the animal may step without knowing it from the floor upon the scales. By managing gently, a cow or horse may be made to move itself to the proper place and the weight may then be quickly taken. There is seldom any danger in placing upon such scales, if they are good ones, double the weight they are graduated for. A sufficient number or weight of "poises" will not come with the scale, to balance the animal it is desired to weigh. The counter-balance may easily be made with pieces of iron, lead-pipe, or similar known weights, or, what is neater, the heaviest poise may be taken, and after weighing it carefully first, it may be filed smooth and

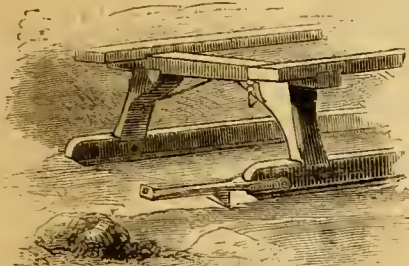
used as a pattern to cast others by, which may be dressed down to the true weight by filing, or by the cold chisel. Such attachments to platform scales, as we have described, are not only a great convenience, and an aid in trying experiments in feeding, etc., but those who sell animals "on the feet," without knowing their weight, may sometimes lose enough on a few animals to pay for scales and attachments twice. No recommendation of portable scales, or exhibition of the various uses to which they are applicable should lead any one, who can afford it, to dispense with the fixed platform scales of large size, (hay and cattle scales). These when of the best manufacture, are sufficiently delicate for all common purposes, often turning with two or three ounces when moderately loaded. Set under cover, near or in the barn, even on the barn floor, they are most convenient.

How to Make a Strong Sleigh.

There are two ways at least of making the "benches" of all kinds of sleighs and cutters, and one is so much stronger and better than the other that we illustrate it. It will be seen by the engraving that a *gain* is made on the upper side of the runner where the knee enters it, so that the shoulders of the tenon at the lower end of the knee are let in below the upper edge of the runner; and that the shoulders on the upper end of the knee are let about half an inch into the beam. It is plain that a sleigh made in this manner must be much stronger than it could be, were the shoulders of the tenons not let into the beam and the runner, and that it will better endure the strains, which come in almost every direction. The tenons of a sleigh usually give out first. This fact teaches the importance of putting all the timber together in the strongest possible manner, thus gaining lightness and the same strength as with heavier wood.

The knees should be made of thoroughly seasoned stuff, and should dry for at least one month after the last dressing, as oak and some other kinds of hard wood will shrink a little every time it is dressed, for a long time. The tenons should be made to fit so tightly on every side of the mortise, that a very heavy hammer will be necessary to drive them

in snug. Then if the tenons and mortises are painted, as they always should be, the runners, knees, beams, and raves will be about as strong and durable as if constructed of one solid piece of wood. Gains cut in the under side of the raves or side pieces, greatly increase the strength



CONSTRUCTION OF A STRONG SLEIGH.

of the sleigh. A good coat of paint applied to the shoulders, tenons and mortises, will make the work drive together more easily, exclude all moisture, keep the timber from shrinking, and render the wood-work much more durable than if they were to be put together without the paint.

An Old Poultry Raiser on Spanish Fowls.

Edward Holmes, of Rockingham Co., N. H., communicates his experience, especially with Spanish fowls, to the *Agriculturist*, as follows:

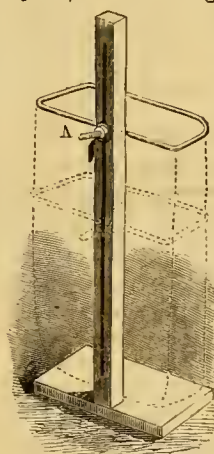
"An experience of thirty-three years in raising poultry, has developed some facts worthy of note. In breeding 28 distinct kinds from the little White and Seabright Bantams, to the great Malay, Brahma and Shanghai breeds, I have found in each some very excellent traits. Some possess good laying qualities, but have not well grained and colored meat, and *vice versa*. In others the chicks are very weak, difficult to raise, long in coming to maturity, and costing more than you could realize from them when grown. The whole Game family are good layers, good mothers, and good poultry, yet are so pugnacious before they are fairly fledged, that at five or six weeks old, cockerels begin to see which is "master," battling constantly and barbarously. It is quite expensive to confine them, as they need a wide range, with a fence some ten feet high, in order to prevent their bad habit of roving. Their carriage is beautiful, they are hardy, and if they can have plenty of room to roam, are profitable. But for a limited space, beauty, color, meat, eggs, and profit, I prefer the

Pure White-faced Black Spanish.—The hens weigh 4 to 5 lbs.; the cocks from 6 to 7 lbs., and have large, single, deeply serrated combs standing erect, while those of the hens, in the laying season especially, fall over, nearly covering one eye. They have delicate limbs, very small head, and slate-colored legs. The chicks are hardy, easily raised, taking from six to seven months to attain maturity. They are not large birds; will lay constantly, except during the molting season (about four months), thus giving about two hundred and forty eggs in a year. A variety and plenty of food, with lime, gravel and pure water, should be always accessible. A few meat scraps occasionally in winter are very essential to supply the place of insects which they consume in summer. As to the cost: from the 15th day of February, 1864, to the 25th day of May, 1865, I kept four hens and one rooster in a coop; weighed 23 lbs. of corn, to be exact, and 50 lbs. of barley, and kept it constantly before them, with good pure water and lime, which they consumed during the above mentioned time. This is equivalent to 58 lbs., or

one bushel a year for each fowl, at an average of \$2 per bushel. The four hens were kept separate from all other fowls, commenced laying about the 12th to the 20th of December previous, and continued to lay, showing no signs of sitting, excepting one as late in the season as August. They layed in all ten hundred and twenty-three eggs. One out of the number laid three hundred and three eggs, which was by far the greatest number laid by one hen in one year during my experience. I found last spring that she did not begin to lay as early as the others by some two months. She has laid constantly since then, and is now (Oct. 23d) still laying. The others averaged two hundred and forty eggs each. They are a rare bird, and full bloods are scarce in this country, though many assume the name for effect. I have kept them eleven years, and the foregoing shows them to be at least one of the most profitable kinds of fowls."

A Convenient Bag-holder.

The convenient bag-holder illustrated herewith consists of a standard of hard wood 4 feet long, 2 inches square, having a long slot or mortise through it as represented by the dark line, and the lower end secured to a piece of plank, 1½ inches thick and fourteen inches square, and a sliding



BAG HOLDER.

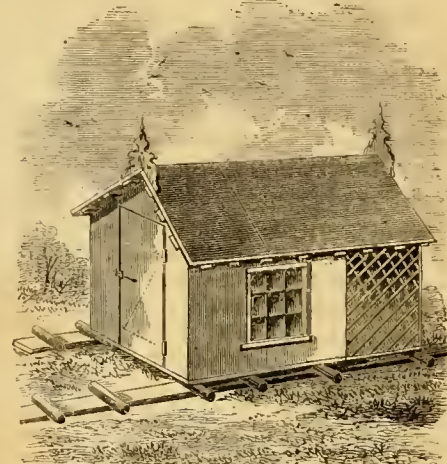
shown, the shank of which passes through the long slot; where it is secured by the nut at A, having a handle on one side of it. The size of the slide must correspond with the size of the mouth of the bags. A large bag may be attached to a small slide; but a small bag cannot be fastened to a large one. The dotted lines are to represent the slide adjusted for a short bag. There are four sharp, iron spurs in the slide, which are not shown in the illustration, to fasten the bag over. Such a bag-holder will be found eminently useful when it is desirable to shovel in any kind of grain, fruit, vegetables, or other material. If bags be small, a large wooden funnel may be placed on the mouth, to prevent grain, or ears of corn from falling outside.

A Novel Poultry House, with other Hints.

A correspondent in New Haven Co., Conn., seeing in the offer of \$300 in prizes for a barn plan, the condition that the plan must include provisions for 300 fowls, writes:—

"Were I owner of a thousand acres and wanted to keep a thousand fowls, I would keep them in houses, containing not more than fifteen each. Each house should be 4 x 9 feet, and 4½ high, no floor; made ornamental or otherwise according to taste and circumstances of the owner. Three feet at one end open lath or lattice work; the remaining six feet has a partition in the center, coming down within one foot of the ground, enclosing 3 x 4 feet. There is no partition between the lathed part and the central part. The enclosed portion is for the roosts and nest boxes. The central part is for feeding,

dusting, etc., and may have roosts and nest boxes also, and glass front if desired. [We think it would be better to enlarge the enclosed part, making it 4 x 4½ instead of 3 x 4.—Ed.] Set the house on wheels or rollers on a nice piece of grass, and move it its length every morning,



POULTRY HOUSE.

giving the fowls new grass every day, and keeping them in the most perfect health and cleanliness. Make nest boxes of sheet iron or tin, and hang them on the walls. Put doors in the ends of the house, to enter for gathering eggs, etc.

FOR NEST EGGS select the handsomest eggs you can find; puncture both ends and blow out the meat, pour into the empty shell two tablespoonfuls of calcined plaster of Paris, mixed in water to the consistence of cream; keep it revolving for a minute when it will be settled on the shell ⅜ inch in thickness, then you will have an "egg" that biddy herself will be unable to tell from the one she laid last.

The house described is in practical operation, and its advantages are perfect cleanliness, consequent health, and contentment of the fowls, the greatest number of fresh eggs secured, and none lost. The fowls get a fresh supply of grass every day, and thrive better in consequence. The house may be moved to any locality on the premises, sheltered or exposed according to the season, S.E. in cold, and N.W. in warm weather, and so in a measure maintain the fowls in the temperature of spring, the egg season. Fowls do better in small than large flocks. When the grass where you started has got to be fine again, move the house back and commence anew. With such houses you can at all times tell the number and condition of your fowls, keep different kinds by themselves, and judge the better of their merits."

NOTES.—We have a few suggestions to make to this excellent idea of a peripatetic poultry house. 1st. The windows may be in the roof—a single row of panes running down like shingles on each side of the roof. They must be protected by wires, or the birds will try to fly out and break them. 2d. A good-sized dusting box should be fastened in the exterior apartment, a little higher than the sills of the house, so as not to deprive the hens of ground room. 3d. The nest boxes in such a house should be separate, and set upon a shelf a foot or more above the ground. 4th. We have used the nest eggs described and found it easier to suck the plaster in than to pour it in.—If they are filled full they will crack.

There may be some difficulty in getting these houses light enough to be moved easily, and yet sufficiently strong and warm, and the size and shape suggested may not be the best.

Walks and Talks on the Farm.

NO. 25.*

The Genesee Farmer.—City Farmers.—Wandering Farmers.—Mickie.—Sows killing Pigs.—Improved vs. common Swine.—Grease for Wool.—Dairying versus Sheep-raising.—Roots and Cabbages for Cows.—The Doctor's System of Feeding.—Soft Corn.—Farrow Cows.—Root Cellars.—Hens on a "Strike."—Sheep's Liver for Poultry.—Draining High Land.—Money invested in Farm Improvements.—Wide Sheds for Animals.—Improving Old Buildings.—Loss of Manure and How to Save It.—Barns, Sheds, and Barn-yards.

"So you have really sold the Farmer," writes John Johnston. "Many will be sorry. Will it be continued and shall you write for it?"

I never knew our venerable friend come so near a compliment as this; for like all sensible men he never flatters. After all, you see, he does not say that he is sorry.

The *Genesee Farmer*, as such, will not be continued; it has been united with the *American Agriculturist*. I shall continue to write for the *Genesee Farmers*, however, just the same. The thought of writing for the *Agriculturist* with its "hundred thousand subscribers and half a million of readers" may be pleasant enough to those who are accustomed to it, but I confess that it makes me feel a little nervous. I shall try to think that I am writing for the *Genesee Farmer*, and if all our old friends take the *Agriculturist* we shall get along as pleasantly as usual. We may be considered plain country people, but—in these times ten thousand good *Genesee* farmers and fruit growers are not to be despised. Let us go in a body, and the editors and proprietors of the *Agriculturist* at least will give us a hearty welcome.

"There are many city people who take the *Agriculturist*?" Yes, there are many thousand copies sold each month in New York alone. But what of that; these city gentlemen *who have a taste for agriculture and horticulture*, are about the most interesting and agreeable people I ever met. They are so delightfully enthusiastic, and like to talk over their successes and failures in cultivating their land. With farmers, agriculture is an old story, and when you meet them they seem to prefer to talk politics rather than about what is doing on their farms. But a city man rather likes to be considered a farmer. He has often the genuine love for agriculture, and sighs for the pleasures of country life. Of course there are those who *affect* this, now that farming is becoming fashionable and I should not be surprised if, in their desire to be thought farmers, some city upstarts should wear homespun and dirty boots. In London, a century or so ago, a machine was invented for spattering gentlemen's boots with mud, and for a penny you could be converted into a country gentleman who had ridden into town! This was much cheaper than keeping a horse. And some New York fashionable tailor could get up a suit of farmer's clothes for far less than it would cost to live in the country.

* These "Walks and Talks" are continued from the *Genesee Farmer*, which is now merged into the *Agriculturist*. We have at the *Agriculturist* Office the stereotype plates of the *Genesee Farmer* and can supply the yearly volumes for eight years past, beginning with 1858. Price per volume \$1.25 if bound, \$1, if in numbers. Sent post-paid at the same price. The volumes for 1864 and 1865 contain the first twenty-four "Walks and Talks," of which we here give No. 25. These articles are narratives of actual experience on the farm.

A man called to see me to-day who wanted a job at chopping by the cord. He was a Canadian farmer and quite an intelligent looking man. I asked him what brought him over here. He said, a neighbor told him that in the oil regions he could get \$5 a day, and as this was more than he could make on his farm, he concluded to rent it and started for 'Pithole City.' "But he deceived me; when I got there I could get nothing to do, and board was \$10 a week. So I started home again, but thought I would stop here and chop this winter if I can get a chance."

It is passing strange that so many farmers are willing to leave their homes to engage in some improbable scheme for getting an easier living. If a man has been so unfortunate as to settle in a swamp where there is no chance of drainage he had better pull up stakes and leave. But in almost every other case he had better stay where he is and "fight it out on that line." This man had left a wife and family, because he thought he could make a little more money, and here he is, wandering about, losing his time, and only anxious to get something to do. He is willing to live in a shanty in the woods and board himself. How much more comfortable he would be at home, and even if he should get a little more for chopping, he will find that, after deducting his travelling expenses and his loss of time, he would have done far better to have stayed at home. In this country, wages cannot be much higher, all things considered, at one point than at another. It may be the case for a short time at some place, but the fact soon becomes known and men rush there like air into a vacuum and wages find their level.

A year ago an Irishman informed me he had a friend in Ireland that wanted to come to this country, who could do all kinds of farm work. I told him to come directly here and I would pay him all he was worth. He came and went to work without loss of time. He was a faithful fellow, and I gave him \$15 a month and his board, which I thought good pay for a raw boy not over eighteen. But Mickie had a cousin in "Chickago," as he called it, who wrote him that he could get \$2 a day; and though I endeavored to explain that though he might get such wages for a short time, the probabilities were that during the winter he would be thrown out of employment, and that he would make more, or rather save more, by staying here, he concluded to leave. Poor Mickie. He is like all the rest. He did not know when he was well off. He has gone to "Chickago."

Mickie loved pigs and took capital care of them. He met me at the gate one night as I came home from the city, and I saw from his excitement that something unusual had happened. "The sow has got eleven little pigs, and such beauties!" A happier man than Mickie was not to be found in the town of Yates. He wanted everybody to see his Suffolks. It was a proud day for Mickie. But alas for human joy. Next morning Mickie had to tell me that one of the little pigs was dead. "Oh well, never mind, ten is enough; they will do all the better." But the next night another was gone. The sow had lain on it. "You should not have fed her so much; she is too fat." The next morning Mickie was sadder than ever. "The old haster has killed another," he said. "Well, we must put a stop to it." Sows kill their pigs not by lying on them, but by crowding them against the sides of the pen. We put some poles round the inside of the pen, about one foot from the boards, so that the sow in lying down could not crush the little pigs against the sides, and we had no further trouble. It is a simple preventive, and did not take half an hour's work. Mickie had acquired one good trait on the Irish farm where he had been brought up. He had been

taught to do things at stated times; his last request to his successor was: "Be sure you clean out the pigs and give them fresh litter every Monday morning."

The doctor has often spoken to me about a remarkable pig he has, and to-day I went to see it. He has two pigs that he purchased last spring from different litters. One is a nearly thorough bred Suffolk, and the other has nothing but common blood in his veins. They are of the same age, and both have had the same food and treatment; and yet the Suffolk is nearly or quite as heavy again as the other! Having been fed in the same pen, nothing could more forcibly illustrate the value of good breeding. I think it will weigh 500 lbs. The doctor was not at home, but he has an intelligent "contraband" who does the honors of the establishment, and is evidently proud of the pig. "The Doctor can get a hundred dollars for him, Sah." "I guess not, Solomon; pork is down, and if everybody fed pigs as well as you do, it would stay down." But even if he brings only \$75, he will pay well for the "pudding" and milk he has eaten.

"By the way, Solomon, how do you make this 'pudding' that the Doctor speaks so highly of?"

"I put a quart of corn meal into a pail, and pour some boiling water over it and stir it up."

"How much water?"

"About half a pailful. It gets quite thick, you know, Sah, and we fill up the pail with milk to cool it before giving it to the pigs."

Few farm products command a higher price or are more profitable than good butter. In 1861 butter was sold in Rochester for 10c. a lb.; now it brings 50c. At that time, and for a year or two afterwards, nothing was talked about but sheep. Cows were neglected. I urged farmers in the grain growing districts to pay more attention to the dairy. It is a safe rule to do just what others are not doing: to buy when others sell, and sell when others buy. Sheep paid better than cows a few years ago, and everybody went into sheep husbandry. The papers were full of sheep. Books were published on the subject, and we had soon a full blown mania in regard to American Merinos and heavy fleeces. It will not be long before we shall look back in astonishment at the blind credulity which seems to have seized even intelligent farmers. We shall have no such mania in regard to cows, for the simple reason that there is no particular breed that it will pay to get up an excitement about. We have sheep that will produce fleeces weighing 25 pounds, twenty pounds of which is worthless matter, but which, for a time at least, sold as wool. Had we a breed of cows that would give five pounds a day of something that would sell for butter, but which contained only one pound of the real article, we should soon have an excitement that would equal in intensity the severest form of the sheep fever.

But fortunately we have no such breed; and we may now safely feed our cows as much food as they can turn into milk, with the certainty that the butter will more than pay for the little extras that can be given them. There is nothing so good as cabbages to keep up the flow of milk during the early part of winter; and for later use beets and mangold wurzels are invaluable. Of course, you want to feed some grain with them. Considered merely in relation to the amount of nutriment they contain, they are usually worth more to sell in the cities and villages, than they are to feed out on the farm. But fed with corn meal they give tone to the system, and enable the cow to extract more butter from the meal and hay, or corn stalks, than she could do without some such succulent food.

The Doctor adopts a good system. He has only four or five acres of land, but he manages to keep two cows and feed a couple of pigs with considerable profit and with no small degree of satisfaction. He makes pets of all his animals, and usually enjoys seeing them eat. He studies their comfort and nothing disgnasts him so much as a farmer whose stock is exposed to cold winds and driving storms.

Whenever I expect a visit from him, I am careful to have my cows all in the barns.

He lectured me a few weeks ago, for feeding corn in the ear. "But it is soft corn," I remarked "in excuse." "No matter," he said, "keep it a few weeks, when it will dry, and then you can shell and grind it. Do not let it beseech you fall into this miserable habit of feeding grain whole. You lose one-third its value." I believe he is right; it had never occurred to me that I could shell and grind the soft corn, but on trying to shell it I found no difficulty. There may be an ear occasionally that will not shell clean, but I am satisfied that nine-tenths of what is ordinarily termed "soft corn" if kept in a good airy corn house, or even a crib of rails, for a month or six weeks, can be shelled and ground. It is less trouble to throw it by the basketful to the pigs, and in parts of the West where corn is cheap the practice may not be so objectionable, but in this section we cannot afford to waste grain merely to save a little labor and forethought.

But I was going to tell you about the Doctor's system of feeding his cows. He buys a new milch cow every spring, and keeps her two years. She will give milk all the time, and when he turns her off, she is fit for the butcher and commands a high price. But this is not all; he gets the richest of milk and a good deal of it. "I tell you, it pays," he said the other day, "to feed well. It requires a certain amount of food to support the animal, and the milk and butter is obtained from the food given *in excess* of this amount. To give only just enough to keep the cow alive is of course absurd, as you would get no return at all for the food. It would all be consumed to keep up the animal heat and the vital functions. Now as the milk is derived from the extra food, the more you can get the cow to eat and digest, the more profitable will she prove."

The Doctor got this argument in favor of high feeding from me. It is one of my pet ideas, but I did not interrupt him. "You know," he continued, "I have a large family." "Of course," I said, "all clergymen have." "Well," he continued, "we not only get all the butter and milk we need from these two cows, but we are still packing down butter every week."

On a farm we cannot, perhaps, adopt the system of keeping farrow cows. But in the cities it has many advantages, not the least of which is that you are sure of milk all the year round. When we lived in the city, we had a cow (a thorough bred Devon) that gave milk winter and summer for five years in succession. She did not give much, but all that we needed, and it was very rich. She finally got so fat that, though still giving milk, I sold her to the butcher. But one thing is true of city and country: it pays to feed cows all the food that they can turn into butter.

I need a Root Cellar, adjoining my basement cattle stable. It is almost impossible to get along without one, and farm to advantage. I am fully convinced that we must raise more succulent food, either cabbage, mangold wurzel, sugar beets, rutabagas, or turnips, for our stock in winter; but this system cannot be adopted without a good cellar to store them in, so arranged that they can be fed out with little labor.

Our hens are on a "strike." They refuse to lay a single egg. They have plenty of food, comfortable quarters, a good range, and have had the best treatment we know how to give them, and yet they persistently refuse to go to work! I have not heard a cackle for two months. The grocers are clamorous for eggs, and offer the highest prices, but all to no purpose. If I could ascertain who are the ring-leaders in the combination, they would soon find themselves in hot water.

A city friend, who keeps a few hens and gets all the eggs he wants, suggests that probably my hens are too fat, and that they do not get flesh meat. He had a self-regulating feeding trough, but gave it up as he thought his hens got too much grain. He now feeds them less grain and gives them sheep's

pluck, which he gets for a trifle from the butchers, and the hens lay every day. He puts the plucks in boiling water to coagulate the blood, and then chops them up fine, and the hens eat them with a relish.

Last spring I cut an underdrain through a wet portion of a field. There is high ground on each side of it. This fall I found the land on each side of the drain perfectly dry for a rod or more, but further up the hill it was quite wet, and this was the case for several weeks *before the drain commenced to discharge any water!* I suppose the reason is this: The earth on each side of the drain, last spring, as the water left it, cracked into innumerable little fissures, and these after the rains came in the fall, absorbed the water like a sponge, to the depth of the drain, say three feet. So the surface was perfectly dry, even though no water run into the drain.—In the spring I shall carry some lateral drains up the sides of the hill, for I am satisfied that the high land, on my farm at least, needs draining more than the valleys. If the side hills were thoroughly underdrained, the low land would need little more than a few main drains.

My friend G. W. takes me to task for asserting that good prices of farm produce stimulate agricultural improvements. "Did you ever," he asks, "know a farmer, other than an amateur, who invested his profits in making improvements on his farm?" Yes I have. Last spring I thought of building a shed on the west side of the barn-yard, with a loft for fodder. I thought it would not only be useful in itself, but would protect the barn yard from our severe west winds. One of my neighbors has one twenty-two feet wide, with an alley in front for feeding cows, which are fastened up with stanchions. It is boarded up on both sides and is therefore not properly a shed. I thought of building merely an open shed, as I have an idea that cattle do better when not so closely confined, provided you have a warm, comfortable yard. I went to see our old friend John Johnston and consulted him on the subject. I told him I thought of building a shed twenty-four feet wide. "Don't you do it," he quickly replied. "Never build a shed less than forty feet wide. It is a great mistake. Narrow sheds are little use. The rain frequently drives in eight or ten feet, and the master-cattle stand on the far side, where it is warm, and keep the rest out in the cold. Many years ago, I built some sheds twenty feet wide, but I did not like them. Three or four years afterwards I happened to have a good wheat-crop and sold it pretty well, so I pulled down these sheds and built new ones thirty-two feet wide. If I had to do it again, I would build them forty feet. Mr. Swan built his forty feet and they are splendid."

The good wheat crop and the good prices built the sheds; and these sheds have sheltered some of the best flocks of fat sheep that ever graced the New York market. The sheep made rich manure, and the manure made big crops of wheat, and the sheep and the wheat together have made Mr. Johnston rich—without making any one poorer.

I did not build the shed. My wheat crop "happened" not to be very good, and besides I thought that if it needed to be forty feet wide, I had better build a barn with a good shed under it. This I shall do after my land is drained, and I have had two or three of John Johnston's wheat crops. I am looking forward with much interest to the publication of the best plan of a barn, for which such a liberal prize was offered in the *Agriculturist*. I understand that a great many excellent plans have been sent in, and I hope we shall get not only the Prize plan, but several of the others, and then we can all judge for ourselves which plan is best suited to our particular situation and wants.

But after all, what most of us are interested in is, not what is the best kind of barn to build, but how we can alter, improve or add to the buildings we already have. When I bought this farm, there were but two small barns on it, one for grain, with a cattle cellar underneath, and one venerable but

not very picturesque institution standing on the side of the road, designed for horses. It is very convenient for posting bills of Auction Sales, and there is a pump close by that is liberally patronized. The horse litter is thrown out over a fence into the field and forms a loose, smoking, conical heap of brown matter that is a favorite resort for chickens, and which gives off ammoniacal gases that I hope descend on the Deacon's land near by.

The pig pen was at one corner of the barn-yard, as far remote as possible from the cow stable, and still further from the sheep sheds. Now, you know, pigs eat corn and drink milk, and they extract from these articles a small amount of nitrogen and a good deal of carbon which they convert into pork. The remainder, comprising nearly all the mineral ingredients of the corn and about four-fifths of the nitrogen, with more or less water, is left in a finely comminuted state and affords excellent pabulum for cabbages and onions. Well, this material was thrown out, like the horse litter, into a heap by itself, but it is of a cold and sluggish temperament and does not give off any ammonia for the Deacon's use. It is not lost, however. There is considerable water which finds its way into this particular corner of the barn-yard, and after staying a few days, and loading itself with whatever is soluble, wends its way slowly to the brook, and so on to the Genesee river and Lake Ontario, and comes back to us in the shape of a nice pickerel!

Now the Deacon is an excellent neighbor, and pickerel are quite toothsome, but my land needs ammonia as much as the Deacon's, and it is by no means certain that the pickerel will not fall into other hands than mine.

To prevent this escape of ammonia and the loss of soluble ingredients is of the first importance. It can be accomplished with little trouble. The first requisite is to have all the buildings together. In the grain districts, where straw is abundant, it is to my opinion better to have them arranged on three sides of a barn-yard, rather than to have grain barn, horse and cow stables, pig pens, etc., all in one building. A barn-yard surrounded with buildings and sheds on the West, North, and East, and open only to the South, or if more convenient to the South-East, is a pleasant place to winter young stock, store pigs, etc. The centre should be concave, and round this hollow there should be a road, in front of the buildings, wide enough to drive a wagon. This should be dry and firm. The dirt taken out from the centre can usually be disposed of to advantage in raising this road and leveling any inequalities. It should slope a little from the buildings towards the centre, so that the water can run off readily. This is very important. Nothing is so unpleasant as a wet barn-yard, where you cannot go from one building to another without getting ankle-deep in mud. A man with a plow, a dirt scraper, and a pair of horses, can soon do all that is necessary; of course the side towards the gate, where the manure is drawn out, should have only a gentle slope.

Into this hollow, or as it is called in some sections of England, the "mixer," all the manure should be thrown and mixed together. This is the essential point. Pig manure is cold and sluggish, and cow dung does not ferment readily, while horse litter and sheep droppings are very active. But in the case of the latter the treading of the sheep prevents any serious loss from too rapid fermentation; but a loose heap of horse manure will soon lose half its value. Let all be mixed together and there will be no loss of ammonia.

The loss from drainage is much more serious than is generally supposed—far greater than from the escape of ammonia. *The buildings should be all spouted to carry off the water.* Then, if we have wide sheds, and the barn-yard is not too large, the manure will absorb all the liquid and the little rain which falls on the surface. But it is better to have a tank in which any excess of liquid there may be after heavy rains, can be preserved, and pumped back when the heap is dry. This is the simplest, the cheapest, and the best method of saving manure I have ever seen.



THE TURKEYS' HOLIDAYS.



Boxes instead of Pots.

A well-known seedsman said to us some time ago, "If you will tell your readers never to sow seeds in pots, you will do them a great favor, and save us many complaints from customers who fail with their seeds, and charge the failure to the bad quality of the seeds, rather than to their own bad management." We quite agree with our friend, that it requires more care than most people can give to successfully start seeds in common pots in ordinary rooms. Those who have no other "glass" than the kitchen or sitting room window, can get quite a start with plants for the vegetable or flower-garden, if they make proper use of the facilities their windows afford. A common flower pot, unless it be of a large size, dries out very rapidly in the warm air of the dwelling. Its sides expose a great surface, and are constantly absorbing moisture from the ball of earth, to be quickly evaporated, and the young plants are alternately soaked or parched every day. Established and hardy plants can endure these changes, but with delicate seedlings the case is different; their root hairs, so fine that they can only be seen by a microscope, do a good part of the work of absorbing; these are so delicate that they wither with any unusual dryness, and the young plant receives a check if it does not die outright. This difficulty may be overcome by setting the pots in a box and surrounding them by moss, sawdust, or other similar material, but this causes a great waste of room, and it is much better to use the box at once without the intervention of pots, unless in the case of cucumbers, squashes, and other large plants, which it is desirable to turn out without disturbing the roots. We have used boxes a foot square and about 4 inches deep, with satisfaction, though the size may be modified to suit the window. It is necessary that the boards be thick, an inch is none too thick, and well nailed to prevent warping. With plants started in this way as with those in hot beds, success depends upon a judicious management of light air and water. An abundance of light is needed, but care must be taken to shield the tender plants from a burning sun. In most dwellings the windows are not very tight, and this is all the better for the plants, as they get in this way a share of ventilation. In all suitable weather the windows should be opened above, taking care to avoid sudden changes of temperature. Many, never having tried a hot-bed, think they can not afford the time and expense, and to such we commend the use of these window boxes.

Our Experience with Tomatoes.

Tomatoes differ much, not only in earliness and productiveness, but in flavor. Last year we planted side by side four varieties, and when the fruit ripened, it was served raw at breakfast and cooked at dinner daily, as long as the season lasted, taking care that each variety was served by itself. In this way we obtained from repeated trials the judgment of others, made without knowing the name of the variety. The kinds were Early Smooth Red, Fejee, Cook's Favorite, and Valencia Cluster, named in the order of their excellence. The Early Red, the

seed of which came from Thorburn's, was solid, juicy, and of superior flavor, and the earliest of any except Cook's Favorite, which came a few days sooner. Fejee is too well known to require description. Its large solid fruit is rather apt to crack and rot in bad weather. Cook's Favorite is productive and the earliest of the four, solid, but not so fine as Early Red. Valencia Cluster bears well, but, with us, is so sour as not to be worth growing. By proper care in selecting



CANARY-BIRD FLOWER.—(*Tropaeolum peregrinum*.)

for seed the specimens combining the most desirable qualities, any one can have much better fruit than if no such precautions are taken.

The Canary-bird Flower.

Tropaeolum peregrinum.

If this old flower could only be raised under glass, and were sold for a high price, it would probably be much better known than it now is. It is a great favorite of ours, and we scarcely ever met with a person who had seen it before, or who did not on first seeing it say "how beautiful!" Indeed, we expect that lovers of flowers, when they see our engraving, will make a similar exclamation, for the artist has caught the expression of the plant with great accuracy, and the engraver has faithfully rendered the drawing. This species is a native of New Grenada, and has been in cultivation for more than a half century. It belongs to the same genus, *Tropaeolum*, as the common Indian Cress or Nasturtium, and like that is a climber, clinging

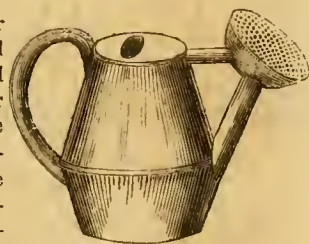
by twisting its long petioles or leaf stalks. The petals are fringed, and this with the peculiarly graceful bend of the spur of the calyx, gives the flower a striking resemblance to a small bird, a similarity which is helped out by the fine canary yellow color, and the pert way, so to speak, in which the flower is set upon its stems. The plant is an annual, and is grown about as readily as the common Nasturtium. The seeds

may be planted in May, where they are to grow, or, if started in the house or in a hot-bed, they readily bear transplanting. A warm, light soil suits it best, as it flowers more abundantly than in rich soils. It climbs to the height of 10 or 12 feet, and may be used wherever other climbers are appropriate. It is well to place it in some spot where the singular form of the flowers can be readily seen. The seeds ripen rather slowly, and as there is usually a great temptation to pick the early blossoms, enough should be left to secure a stock of seeds for another year. The name *Tropaeolum*, comes from the Greek word for *trophy*; the leaves of the common Nasturtium resembling a shield or banner, while its flowers are shaped somewhat like an ancient helmet. The specific name of the present species, *peregrinum*, means foreign or exotic. The seeds are sold by all the dealers, under the incorrect name of *Tropaeolum Canariense*, usually at ten cents per package.

A French Watering Pot.

While the French horticultural implements are many of them inferior to ours, and some are unnecessarily complicated, they occasionally hit upon a good thing as they have done in the matter of the *arrosoir* or watering-pot. Chancing to see the implement in the hands of a French gardener, we took the measurements from which the engraving was made, though the right proportions are not observed. The height is 14 inches; greatest breadth 12 inches; width across the top 3 inches; diameter of rose 8 inches; diameter of spout upon which the rose is placed 2½ inches; length of brace from the rose to top of the pot, 4 inches. The curve of the handle is shown in the drawing; it is cylindrical, as is the brace, which last serves as a handle also. The

advantages of this over the usual form are the greater ease in carrying, and in holding the pot while watering. A skillful gardener uses two at once, and never sets them down while watering. The pots are held by the brace and filled by dipping in a tub or reservoir, and they are carried in this manner to the place where the watering is to be done. By a dexterous movement he lets go of the brace, at the same time giving the pots a slight twist, and catches them by the handles. The long curved handle allows the point at which the hand is placed to be shifted easily, so as to give the pot a proper inclination, which is done with greater ease than with those of ordinary form.



FRENCH WATERING POT.

The Movements of Plants.

In an article last month (December), we noticed the interesting observations made by Mr. Darwin on the manner in which plants climb. It was stated, in reference to those climbers which twine around a support, that the free upper portion of a limb or shoot, had a spontaneous motion, and kept sweeping in a circle or ellipse in search of some object around which to twine. But plants climb in other ways than by twining their stems around a support, and Mr. Darwin's observations upon these are even more interesting than those already alluded to. As our space will only allow of the briefest reference to the matter, we select a point here and there from his account. Many plants cling by means of their leaf stalks or petioles; these, at a certain stage of their development, are very sensitive, and bend when slightly rubbed or



Fig. 1.—CLIMBING SOLANUM.

subjected to a slight continuous pressure, such as that of a loop of soft thread, weighing only $\frac{1}{10}$ of a grain. The upper parts of the shoots of these plants also revolve, after the manner of twiners; this motion brings the petiole in contact with some object, it is stimulated to bend, and by curving around the object thus touched, the plant is held in place. After the petiole has remained thus clasped for a few days, it loses its ability to unbend, and becomes rigid, and usually much increased in size, and strengthened by becoming more woody. Among the plants in which these phenomena may be observed the following are common: *Clematis*, of different species; *Tropaeolum*, or Nasturtium, of the various climbing species, including the Canary-bird flower, figured on page 17; *Maurandia*; *Solanum jasminoides*, figured last month on page 380. The last named is very slow in its movements, but when the petioles have once clasped, they increase much in size, often becoming as large as the stem from which they spring, and their texture becomes woody to a remarkable degree. Fig. 1, shows a petiole of the *Solanum jasminoides*, after it has clasped a stick, and become woody.

Still more interesting are the observations on those plants which have tendrils—organs used exclusively for climbing. Plants thus provided are found in widely separated natural families, and the phenomena they present vary; in some, the upper portion of the stem revolves together with the tendrils, and in others the tendrils alone revolve, and again there is no revolving motion in either stem or tendril. Tendrils are long thread-like organs, usually branched, with



Fig. 2.—TENDRIL.

their extremities more or less curved to form a hook. The sensitiveness, above spoken of as belonging to climbing leaf stalks, is highly developed in some tendrils, which by a very slight rub soon bend, or even coil themselves into a spiral. After the end of a tendril is brought by the revolving motion in contact with some suitable support, it clasps firmly, and taking two or three turns around it holds fast. Then occurs a most remarkable spiral contraction, the portion of the tendril between the plant and the object to which its extremity is attached, coils itself after the manner of a spiral spring. This has the effect, not only of drawing the plant nearer to the support, but of diminishing the chances of its being torn away by the winds; each tendril being elastic, it enables the plant, as the sailor would say, to "ease up" in a violent gale. It is a curious fact that each tendril which has coiled after the extremity has become fixed, has one part of it twisted in one direction and another part in the opposite direction, as is shown in figure 2.

This arrangement prevents the tendril from being weakened by twisting upon its axis, the twist in one direction being compensated by that in the other.—Our common Virginia Creeper has a peculiar mode of attaching itself which is worthy of notice, as it shows how wonderfully this plant is adapted to climbing up a flat surface. The young tendril of the plant is shown in fig. 3. When it meets with a flat surface, all the branches of the tendril turn toward it and bring their hooked tips laterally in contact with it, the branches at the same time spreading widely apart. In about two days after the tendril has thus arranged itself, little disks or cushions begin to form at the tips, as in fig. 4; these, as they grow, fit closely



Fig. 3.—VIRGINIA CREEPER.

to any minute inequalities of the surface upon which they may be, and it is very probable that they exude a small amount of resinous cement which helps render the attachment more complete. Nor is this the only change that takes place; those branches of the tendril that fail to attach themselves, wither and drop off, while the attached ones acquire great strength and by

contracting spirally become highly elastic and well calculated to hold the great weight that we know they sustain. But we have not room for more examples from this memoir so full of interesting facts. We trust enough have been given to show the admirable arrangements with which some plants are endowed, to enable them to lift themselves to the light and air, and to suggest to our readers some instructive observations which they can repeat for themselves upon our common climbing plants. Of those which twine, the Morning Glory, Bean, and Hop are common; the present article enumerates some of the leaf climbers, while the squash family, grape, etc., give common examples of tendrils.

Vines, Roses etc., in Pots, versus "Broad Borders."

A discussion has arisen among cultivators as to the best method of growing vines. While some claim that the best plants are produced by pot culture, others discard pots altogether, and let the roots have abundant room. In August of last year we set forth the advantages claimed by those who adopt the border system, and we now allow the other side to be presented by one who signs himself "A Nurseryman."

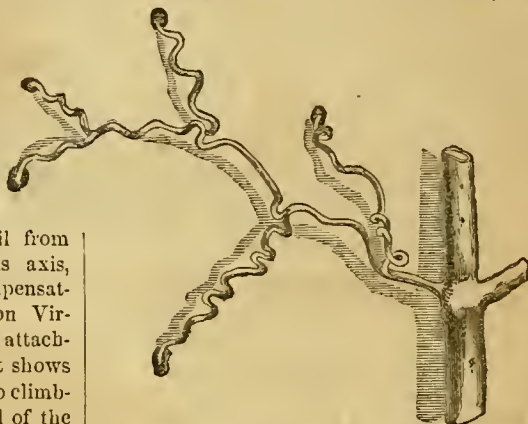


Fig. 4.—VIRGINIA CREEPER.

We may remark that the article is from an experienced cultivator, and one who is not especially devoted to grape growing.

"I am and ever have been an advocate of pot culture, not only for vines but for all plants that can be conveniently grown in pots, to ensure exactly what the advocates of the 'broad borders' deery, a cramped condition of the roots, or, to put it more fairly, a *confined* condition of the roots, and it is this condition that I claim as advantageous over vines grown in frames or in the borders of green-houses, where they are huddled together, unstaked, three or four inches apart. I care not with what care they may be lifted, mutilation of the fibres to a great extent must take place, and the growth after planting must in consequence be diminished, while in the pot grown vine you have well ripened *wood* and *roots*, and every fibre intact. Let any one try a corresponding number of each, of one year old plants of Delaware for example, grown by the rival modes and assuredly he will give the 'broad border' plants a wide berth in the future.

"What would we think of any intelligent gardener planting a grapery from vines grown in broad borders? The practice of a century has demonstrated beyond a cavil, that vines grown from eyes, (if not planted out to remain, the season they are rooted,) do infinitely better to be grown in pots, than to be planted out in 'broad' or in any other border.

"Now what is true of grape vines is much more true of roses, for the vine having better recuperative powers, can stand mutilation of the root better than the rose. It is no exaggeration to say that 50 per cent of all roses that are sold, dug from the open ground, die the first season they are planted; that is if they are one year old plants on their own roots; older plants, or budded plants may do better, but in no case will they compare with plants grown in pots, even though such plants are not half the size. In conversation with a western nursery agent the other day, he admitted that no article that he sold, gave him so much trouble as the rose, not a case that he had heard from but the result had been unsatisfactory. In one instance only 15 out of 100 lived, and these were in such a condition that they would not winter over. In roses planted from pots, not one in a thousand need be lost, and a healthy growth and abundant bloom will always be insured.

"But to return to the grape vines, some of the great moguls of the trade have given their fiat, that for reasons given they have entirely discarded pot culture, and now grow exclusively on 'broad borders'. At once a host of small fry, parrot-like, take up the cry and tell us that they too have discarded pot culture and now grow only in 'broad borders.' Now may we ask if there is not some other reason for this very confident and radical assertion? is there not 'a hog in the fence' somewhere to occasion all this liberality and benevolence to the dear public? Of course, the question of cost in the rival modes is unthought of. In case it may be, it might be well to state that a vine raised in the 'broad borders' unstaked and otherwise uncared for, can be grown at a handsome profit at \$10 per 100; while a properly grown vine, in a six or eight inch pot, that has been duly pinched, staked, and shifted, will not very quickly make the fortune of the grower at \$50 per 100. It would be interesting to know if these facts have had anything to do with inducing this rapid and radical change of system with some cultivators.

I am afraid these horticultural products of the 'broad borders' have even more merit than the Yorkshire man's razors, for they are at once made both to 'sell' and to 'shave.'

Winter Greens—The Club-Mosses.

There are many things common enough in the country, for which the city pays a sum that in the yearly aggregate is quite large. During the Christmas holidays New-York City has doubtless paid thousands of dollars for green leaves and bright berries for holiday decoration. For several days preceding Christmas, in the streets around Washington market, it seems as if the principal business were the buying and selling of Evergreens. The Jersey people who live near where the Holly, Inkberry, Laurel, and

other such shrubs grow, reap a rich harvest at such times. Not only are these shrubs brought to market in sloop loads, but great quantities of humbler plants, such as the Pipsissewa, and the Club-mosses, are made up in wreaths and bunches to meet the demand. Of all these greens, none are more delicate in structure, or more vivid and lasting in color than the Club-mosses. Our engraving represents one of the prettiest of these, the *Lycopodium dendroideum*, the Tree-like Club-moss. It is also called Ground-Pine, a name likewise applied sometimes to some of the Horse-tails, (see August No., 1865.) The species under consideration arises from an underground creeping stem, to the height of 6 to 10 inches. The branches are disposed in a graceful fan-like manner and are thickly clothed with minute leaves. At the top of the stem are borne the fertile spikes, which are made up



LYCOPodium DENDROIDEUM.

of scales regularly overlapping one another. These scales stand for flowers, the plant belonging to the series of flowerless ones. In a little sac on the underside of these scales, are contained the spores, or bodies which reproduce the plant and answer the purpose of seeds. An enlarged scale, showing its underside, is given in the lower left hand corner of the engraving. The spores are produced very abundantly, and when collected, form a powder which has a pale yellowish color, and a very smooth feel when rubbed between the fingers. The spores of several of the species are known in commerce as Lycopodium. It is used by druggists to envelope pills to keep them from sticking together, and is also used in theatres to imitate lightning. When the spores are diffused through the air as a cloud of dust they burn with a sudden flash. This species presents considerable variety; the one

figured has the leaves lying close to the branches, while others have them more erect. This one is much valued by the florists to use in making up bouquets, and is brought to New-York City from various parts, some as far as from Lake George. This wildling of our woods is needed to make the exotics of our green-houses more beautiful. Another species of Lycopodium, *L. complanatum*, is much used in making wreaths. It has very long and strong stems, with numerous fan-like branches, which are shorter and coarser than *L. dendroideum*.

Select Chrysanthemums in Flower.

These come in flower so late, present so great a variety of color, and are withal so showy, that they fill a place for which we have no other flowers. They are not nearly as common as they should be, as nothing is easier to raise; clumps of them along the borders or massed in beds of well arranged colors, give the garden a gay appearance even after hard frosts, and there is a richness about them that well accords with the season of ripened fruits and Indian summer suns. Then, for in-door decoration they are most valuable, as they continue in bloom for a long time. While they are yet in bloom, is the right time, to make a selection of varieties for next year. We have two classes, the large flowered, and the dwarf or "Pompone" varieties, each of which presents us colors from pure white, yellow and rose to deep maroon, with all intermediate shades. The large flowering kinds are better out of doors, while the others are more adapted to pot-culture. When grown in the border, the plants are apt to get too dense, and it is best to let only as many stems remain as can grow without overcrowding. The plant may be grown from cuttings, taken early in August, or from the great numbers of shoots which an old root throws up in spring. Finely shaped specimens may be made for potting, by giving proper care to those in the border, or they may be grown in pots altogether. A good specimen has but a single stem, which is well furnished with short branches; this is produced by pinching out the ends of the shoots to induce the lateral buds to push. In a rich, light soil, the plants will grow with great vigor and be well set with buds by the time frost comes, when those for in-door bloom may be potted. They will wilt at first, but will recover with a few days' shading, and when well established, an occasional watering with liquid manure will increase the strength and beauty of the bloom. When flowering is over, the pots may be set in a dry cellar or shed until spring, when the plants may be started into growth to furnish a new stock.

The thumb and finger lightly rubbed over the foliage of thick-leaved plants, will do much toward destroying the red spider and other insects,



Fig. 1.—AZALEA VISCOSA.

Our Native Azaleas.

Many years ago we saw upon the catalogue of a dealer in medicinal herbs the question, more pertinent than elegant in its expression:

"Why send to Europe's distant shores
For plants that grow at our own doors?"

The same question might be asked with reference to ornamental as well as medicinal plants. That we do import largely each year of the very plants that grow abundantly with us in the wild state, is a fact well known to any one who visits the nurseries. It is quite difficult to find anything like a general assortment of American shrubs in our nurseries, and the majority of those they do have are from European nurseries. The reason for this is to be found in the fact that there is not a sufficient demand for these things to induce our nurserymen to raise their own stock of them, and it is cheaper to import the few that may be called for than to be at the trouble of propagating them. Though many of these shrubs may be procured from their wild localities, they, as a general thing, are inferior to nursery raised seedlings, which, having been several times transplanted, are furnished with much better roots. We have endeavored to increase the taste for native plants by making them better known, and giving such engravings as will enable them to be recognized. While we gladly welcome the horticultural productions of every country, we would not have those of our own overlooked, especially when, as is often the case, the native plants are equal in merit to those brought from afar.

What can be more beautiful than our native Azaleas? The Europeans have long prized them, and by seedlings and crossings have sent us back a long catalogue of named varieties, which are among the choicest flowering shrubs.

Of the Azaleas, often improperly called Honeysuckles, we have four native species in the Northern and Middle States. In two of them the flowers appear before the leaves and cover the bushes with a robe of beauty: *Azalea nudiflora*, the Pinxter-flower, has flowers varying from flesh color to purple, and is found from New England to Virginia, while *A. calendulacea*, the Flame-colored Azalea, has orange-colored blossoms which change to flame color, and is found in the mountains of Pennsylvania and southward. In the other two species the flowers appear after the leaves develop: *A. arborescens*, the Smooth Azalea, is found in the mountains of Pennsylvania and Virginia, and has fragrant rose-colored flowers. *A. viscosa*, the Clammy Azalea—more commonly known as Swamp Pink, and White Swamp-Honeysuckle—grows from Maine southward, but is more abundant near the coast. The last named is the one we have figured, as it is the commonest, and if not the showiest, its generally pure white flowers, delicious fragrance, and rich green foliage, render it one of the most desirable. It grows in the borders of damp woods and in swamps, and frequently reaches the height of eight or ten feet. The leaves are dark and shining, with brown bristly hairs on their margins. The engraving shows the flowers of their natural size, though the clusters are often larger than the one here presented; they appear in June and July, are usually of the purest white, though sometimes tinged with pink. The exterior of the flowers is thickly covered with small glandular hairs, which secrete a viscid substance; hence the specific name *viscosa*. This species (as do the others,) shows a great tendency to sport in its wild state, as well as in cultivation, and the native specimens vary much in the color of foliage, and in size and color of the flowers. Some of



Fig. 2.—EXCRESCENCES ON AZALEA.

the flowers are of the most perfect dead white, others have a scarlet tint with a white border, while in others the border is more or less flesh-colored or tinged with rose. By hybridizing this species with the European *A. pontica*, great numbers of varieties have been obtained, and are known in the gardens as Belgian Azaleas, etc. Plants if removed from their native habitats with care, will do well in cultivation, if not put in too dry a spot, or one too much exposed to the sun. They should have a soil containing plenty of leaf mold or muck. It often happens that the flowers of this species are transformed into fleshy, irregularly shaped bodies, sometimes as large as a pullet's egg. This substance is of a light green color, covered with a bloom, slightly acidulous, and relished by some who eat it, thinking it the fruit of the shrub, and call it "May Apple," and "Swamp Cheese." The true fruit is a small dry capsule, while these things, if carefully examined, will often show more or less traces of the shape of the flower, and are evidently an abnormal growth. It is probable, though we believe not exactly made out, that this change is produced by the agency of insects. This growth is not produced upon the flower alone, but the leaves sometimes bear it. Last summer, Mr. A. W. Roberts brought us some very interesting specimens from a locality in which the bushes were loaded with them. The excrescences were generally of a very regular, bluntly conical shape when small, but the older ones became irregular, with, however, a graceful outline. Figure 2, shows a branch with the leaves, having these bodies of the natural size, in different stages of development. Similar excrescences are sometimes found on the Huckleberry. All these need a careful study by some competent observer, to determine their character.

The Sponge Cucumber.

Cucumis acutangulus.

Some years ago a friend sent us from Central America, a substance called "vegetable sponge," which he stated was in common use in that country for washing and scrubbing purposes. It was a mass of interlaced fibres, nearly a foot long, not quite cylindrical, but somewhat angular and tapering, presenting much the appearance of fig. 1. It was recognized as the remains of some Cucurbitaceous fruit, but it was some time before we found that it belonged to the same genus as the cucumber. Of late, the plant has been cultivated by those curious in such matters, and through the kindness of Messrs. Henderson & Fleming, we are enabled to give a drawing of the fruit in its fresh state, fig. 2. The plant is a native of the East Indies, and bears heart shaped leaves and yellow blossoms. The fruit, when young, is eaten in the same manner as cucumbers, and is also cooked, mashed and dressed like summer squash. The fruit, when ripe, becomes orange colored, with a hard skin, and within is filled with a complex mass of strong elastic fibres. The seeds are black and rough, and quite unlike the cucumber seed in size and shape. The fruit requires a long season to perfect, and the seeds had best be started under glass, after which they may be grown in the open ground. They will probably be advertised by some seed dealer.

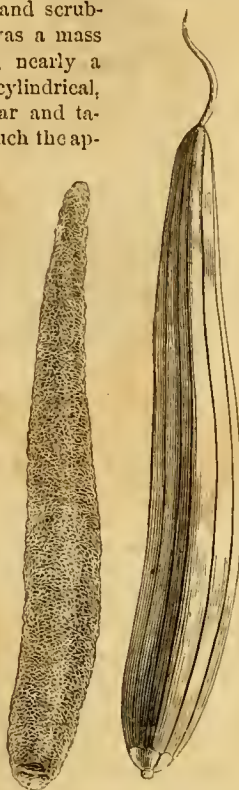


Fig. 1. Fig. 2.

Flowers for a Grave.

The question is sometimes asked us, "What flowers are suitable to plant around a grave?" The feeling which leads to the decoration of the last resting place of the loved dead is a natural one, and one which is in accordance not only with good taste, but with the teachings of religion. It has found its public expression in many beautiful cemeteries all over the land, where the art of the sculptor has combined with that of the landscape gardener to beautify the city of the dead, and make its walks attractive to the living. While the general arrangement of rural cemeteries is usually marked by skill and taste, their effect is frequently marred by incongruities in the individual lots, the owners of which often show more zeal than discretion in their embellishment. One of the worst things to put about a grave is an elaborate iron fence, which looks like an ironmonger's advertisement. If the boundary must be marked, let it be done by a low hedge, but we much prefer to see no boundary. In a well ordered cemetery, the planting of trees should only be done under the advice of the superintendent, as these become so large that they soon contribute to the general effect and are as likely to be out of, as in the

proper place. But in these general considerations we are led away from the subject of flowers. In the first place we would avoid all gaudy colors, and in the second place, select those which need but little care. This last may seem an unnecessary caution to the recently bereaved; but we are so constituted that we can not always mourn, and we have seen many instances in which, for good reasons doubtless, these floral decorations fell into a neglect which showed that they were not well chosen. A good green foliage, with white flowers, is the combination most appropriate to a funeral wreath, and is that which we prefer in floral decorations for the grave, though colored flowers are admissible, provided they be of delicate tints. *Deutzia gracilis*, a low shrub, covered in spring with delicate white flowers, will be suitable where climate is no more severe than around New York. *Daphne encorum*, a low evergreen, with pink fragrant flowers and hardy. The Black Hellebore, or Christmas-rose, with large white flowers, blooming in Nov. or March, though not very common, is well suited to the purpose, as is the perennial Candytuft—*Iberis sempervirens*, hardy and blooming freely, full of trusses of white flowers. Among the most appropriate flowers for the cemetery are the bulbs, such as do not need lifting each year. These spring up and flower, complete their growth, and die down, and repeat this year after year, fit "emblems of our own great resurrection." White and bright colored Crocuses, and the Snowflake, are desirable, and bloom in early spring, while the Meadow Saffron—*Colchicum autumnale*, flowers in autumn, with lilac colored bloom. Among the annuals, Sweet Alyssum is one of the best, and it is self-sowing. All these will answer with only occasional attention, but where constant care can be given, a great variety of bedding plants and annuals may be used, avoiding bright yellows, scarlets, and all glaring colors.

THE HOUSEHOLD.

The Ornamentation of Tables and Dishes.

Few are aware how thoroughly the eye and palate are in sympathy, and in how great a measure the appetite is modified by the appearance of our food. The confectioners are aware of this fact, and present their wares in tempting colors, and most of us can recollect seeing an otherwise good meal spoiled by being thrown upon the dishes and set upon a soiled table-cloth. All will admit that neatness and order are essential in the arrangements of a table; these are within the reach of even the poorest. Beyond these there is decoration, ornamentation of our tables for the sole purpose of pleasing the eye, and this is sometimes carried to a great extent. We were once several days a guest at a house where the ornamentation was painfully elaborate, where each day the butter was carved (not stamped) in some new form, and a pie was a work of art which it seemed a pity to destroy. Here the thing was overdone and oppressive, and our readers can make better use of their time than to devote it to anything elaborate. Still, we believe that those of moderate means and in the humbler spheres may with propriety give more attention to the appearance of their tables and the looks of the food upon them, the first great requisite of neatness being complied with. There is no table in the land, from the richest to the poorest, but what would be more attractive for a bunch of flowers. These are decorations that are always in place, and may be set in vases of silver or crystal on the board of the millionaire, or occupy a cracked tumbler by the side of Pat's pork and potatoes. Besides flowers, green upon the table is always pleasing. In the spring

half of the relish of cresses and salads is due to their fresh look, and the fact that they remind us that winter has gone and the season of growth has come. Every garden should have its patch of curled parsley, which will be found useful in ornamenting many dishes, its fine rich green giving an attractive appearance. Just notice the difference in the appearance of a supper table, where in one case the ragged remains of the roast or boiled of a previous dinner are set on, and where the same meat is nicely sliced and regularly laid upon a dish and surrounded by a green border of parsley. This kind of ornamentation is unpretending and always in good taste. A dish of spinach may be made to look really beautiful by having the surface nicely smoothed and then surrounded by a border of slices of hard boiled eggs. Those who wish to attempt something elaborate, can use carrots and beets, these are readily cut into stars, crescents, scrolls, etc., by bending up a strip of sheet tin into the desired shape and using it as a cutter. With these materials a very showy border may be placed around a platter. Of course the extent to which dishes may with good taste be ornamented, will depend upon the occasion and the surroundings. It should never be overdone.

Dangerous Silvering Powders and Liquids, and Tooth Powders.

We cannot too frequently caution the public against certain articles that are daily sold on many street corners in this city and elsewhere, and which are peddled through the country, and even sold by some respectable dealers, unwittingly of course. They have been before exposed in the *American Agriculturist*, and the sale was almost suspended for a time, but is becoming quiet brisk again, judging from what we see and hear. One of these is a "Silvering Powder," often a reddish clay, which rubbed upon a copper cent, or other copper or brass surface, or on some other metals, leaves a beautiful silvery coating. It is simply clay or other substance impregnated with mercury (quick-silver), which gives a temporary bright coating, but will soon tarnish, and what is worse, it will sadly injure the metal upon which it is placed. Mercury dissolves silver and gold and some other metals as readily (not quite as quickly) as water dissolves sugar. So that every application of these powders is spoiling the metals upon which they are placed. Another preparation, equally objectionable, is a "Silvering Fluid." We daily see peddlers with a crowd around them, exhibiting and selling a pinkish material for cleaning and whitening the teeth. An examination of one of these packages showed it to be quite strongly acid. When applied to the teeth it of course cleans them beautifully, by dissolving a little of the outer coating, but every application is eating away the teeth themselves, and thus hastening their early decay.

To Housekeepers.—A Request.

The design of this department of the *Agriculturist* is, to furnish hints and information that will aid our readers in their toilsome work, that will help to adorn their houses, and make them more comfortable and inviting, and also to supply information about various methods, processes, and materials, that will furnish food for thought, and occupy the mind while at work. We often describe and illustrate some common article of food, as Tapioca, Nutmegs, etc. This will be continued from time to time. Household implements also require attention. As a help to this department we will be very glad to receive more letters from our housekeeping readers. Please let us have questions, inquiries, suggestions as to what is wanted or desirable. Information on all departments of housekeeping is solicited. Almost every one has some peculiar mode of cooking, of doing housework, etc., which is not fully known by others. Let us have the particulars. If our readers help us by these ques-

tions and suggestions, we shall be the better able to provide a first-rate Housekeeper's Department.

Minced Beef—An Excellent Preparation.

The following method produces a very convenient, nutritious, and digestible preparation of meat, good for any meal, and especially for the supper table, when any kind of meat is desired at that meal. We published somewhat similar directions for preparing "minced veal" in a former volume of the *Agriculturist* (1860), but later experience, with a little change in the ingredients, shows the method still better for beef: Take say $3\frac{1}{2}$ lbs. of lean beef, without tendons—the cross-rib piece is very good for this, but any lean part will do. Before cooking, chop it very fine—a Halc's meat cutter will do it quickly. Mix with it 6 soda crackers, rolled fine; 3 well beaten eggs; $1\frac{1}{2}$ tablespoonfuls of salt; a teaspoonful or less of ground pepper; 1 small nutmeg grated; 4 tablespoonfuls of cream (or milk); and if the meat is free from fat, add butter the size of an egg or so. Mix all thoroughly; make into a loaf, and bake well in a dripping pan $1\frac{1}{2}$ to 2 hours, basting as with other roast meats. It will keep for a week or two at least.

Chapped Hands are annoying always. They may in a great measure be prevented by using very little soap, if any, keeping it on as briefly as possible, washing it off clean, and then finishing the washing with water to which a little vinegar is added—a teaspoonful to a pint of clear water will answer. This neutralizes any alkali of the soap left on the skin, and gives a soft feel, while it stops the destruction of the cuticle, and saves chapping. The dilute vinegar is also good as a final washing after shaving the face, as it both saves the skin and prevents the alkali from bleaching the whiskers.—A little tallow or even lard, thinly applied at night, or when going out into the cold air, to the hands and face, if chapping, and well rubbed off if necessary, goes far toward preventing further chapping, and promotes the healing of cracks already formed.

Delicate Rice Pudding.—One cup of rice cleaned, washed, put into 1 quart milk, set in a kettle of boiling water. Keep the water boiling until the rice is soft, then add the yolks of 3 eggs, putting a very little cold milk to them, that they may not change at once, and a little salt. Bake about one hour in pretty hot oven. Just before taking up, allowing just time to fit it for the table, beat the whites of the 3 eggs to a foam, and add 1 cup sugar; flavor if you wish: when all beaten together, pour over the pudding, which should be baked in a shoal dish, as this is the sauce to be eaten with it. Put in a brisk oven about five minutes, or until this foam begins to brown. There is so much difference in the length of time required in different ovens it is impossible to give exact time for the finishing.

Good Corn Bread, and Pudding.—The same money will purchase two or three times as much nourishment in corn meal, as it will buy in wheat flour, and it is a matter of economy to use as much of the former as can be made palatable. Of the hundreds of Corn Bread recipes we have published in the *American Agriculturist* none we have tried, have given as continued satisfaction as the following: 1 quart of sweet milk; 1 teaspoonful of cooking soda; 1 teacupful of molasses; 2 teacupfuls of salt; 4 teacupfuls of fine corn meal, and 3 to 4 teacupfuls of wheat flour. Mix all well together, and bake slowly for an hour or more. It keeps moist for several days and is relished by most persons. The proportion of flour and meal may be varied to suit the liking.—The above preparation, cooked in a steamer, makes a good pudding, to be eaten with cream or milk and sugar, or butter alone.

Pumpkin Pancakes.—Two cups milk; two cups stewed pumpkin or squash; half a teacupful saleratus; two eggs. Beat the whites to a froth—add flour enough to make a thin batter. This is called very nice by those who have tried it.

BOYS & GIRLS' COLUMNS.

The Game of Checkers or Draughts.

This interesting and scientific game is almost universally played, but few understand the science of it. It is a game entirely of skill, memory, and attention, and therefore not unworthy a place in our columns. We propose to give in successive numbers rules and instructions for playing, accompanied by a game to be played over, and a position for players to study out.

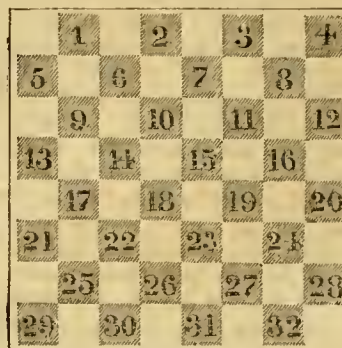
INSTRUCTIONS FOR PLAYING THE GAME.

The game of checkers is played by two persons, on a board of 64 squares, colored alternately, and with two sets of 12 men each, of dark and light colors. Each player in turn moves one of his men, (the black men always move first, each player having the black men every other game,) to the right or left, along the diagonal, on which it stands, and the men can only move forward one square at a time, until they reach the extreme line of the board, when they become kings, and being crowned, can then move either forward or backward to the end of the game, as may be desired by the players.

The object of each player is, to confine the pieces of the other in situations where they cannot be played, or,

THE BOARD NUMBERED.

Black.



White.

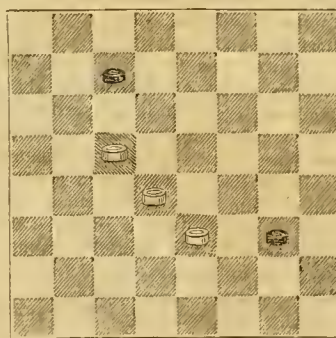
Keep this for future reference.

both to capture and fix so that there may be none that can be played, and the person, whose side is brought to this state, loses the game. In the February number we will commence to give the laws of the game.—Beginners in the game, who desire to see the rules more fully, will find works of instruction advertised on another page.

The diagram above, represents the board numbered. This is for convenience of reference, in telling how a game is played, or in solving a problem. The following game can be readily played, by carefully observing the numbers. Fig. 2 shows a position which may often occur toward the close of a game. Next month we shall show how white may win. The illustration of the numbered board should be preserved for future reference.

POSITION NO. 1.

Black.



White.

White to play and win.

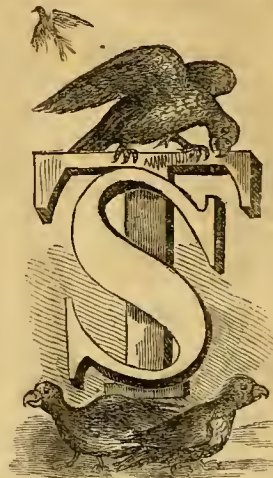
GAME NO. 1.—SINGLE CORNER OPENING. (*)			
Black.	White.	Black.	White.
1—11 to 15	22 to 18	11—5 to 14	22 to 18
2—15 " 22	25 " 18	12—13 " 17	19 " 9
3—8 " 11	29 " 25	12—6 " 13	21 " 14
4—4 " 8	25 " 22	14—10 " 11	26 " 22
5—11 " 16	24 " 20	15—17 " 26	31 " 22
6—8 " 11	27 " 24	16—7 " 10	30 " 25
7—10 " 14	24 " 19	17—2 " 6	25 " 21
8—7 " 10	28 " 24	18—6 " 9	22 " 18
9—3 " 7(a)	32 " 28	19—1 " 5	18 " 15
10—9 " 13	18 " 9	20—11 " 27 and wins.	

(*) Is so called, because each player in beginning plays from one single corner toward the other.

(a) A move not generally made by beginners.

(b) The move that causes the loss of the game.

New Puzzles to be Answered.



No. 183.

to the master. 3. Each girl made a bow to every other girl, and to the master. 217 bows were thus made.

2nd EXERCISE.—1. Each boy made a bow to each young man. 2. Each boy made a bow to every other boy, and to the dancing master. 3. Each young man made a bow to every other young man, and to the dancing master. Result, 244 bows.

3d EXERCISE.—1. Each boy made a bow to each girl. 2. Each boy made a bow to every other boy, and to the dancing master. 3. Each girl made a bow to every other girl, and to the master. This amounted to 271 bows. How many Young Men, Boys and Girls?

No. 185. *Illustrated Rebus.*—An excellent motto for all.

No. 186. *Charade.*

—I am composed of 13 letters. My 6, 1,

4, 11, require fire to

make them success-

ful. My 11, 6, 12, 4,

3, 11, are useful for

blood-letting. My 2,

12, 11, 5, is an orna-

ment to the face, also

a useful sentinel.

My 1, 4, 11, 12, 2, is a

capital crime. My 9,

8, 10, 15, 11, are abun-

dant on Christmas

and New Year's. My

6, 12, 4, 3, 11, are in

almost every body's mouth.

My 7, 12, 10, 5, is relished

by most people, is often

swallowed, but never

eaten. My whole is the

name of a very distinguished

general.

No. 187. *Charade.*—I am composed of 12 letters. My 7,

8, 9, 6, 1, 4, 5, 1, is a Christian virtue. My 7, 11, 1, 9, uses

his feet in writing. My 2, 6, 4, 1, is what many would

like, and what all possess. My 12, 11, 9, 6, 5, 1, is in

nearly all newspapers. My 2, 8, 10, 4, 9, 11, 7, is part of

a vessel. My 12, 3, 9, 6, 11, 12, is made up by every man,

but owned by none. My whole was an effective weapon

used in the late war.

Answers to Problems and Puzzles.

The following are the answers to the Puzzles in the

December number page 352. No. 181, *Illustrated Rebus.*

—2 No one's fan doll one's are command note sail der

born 2 rule the end. Or, To know one's self and all

one's acts command, denotes a leader born to rule the

land. No. 182, *Illustrated Rebus.*—B e z in ever man

ner sand mile din words, butts trick tin morals. Or, Be

easy in your manners and mild in words, but strict in

morals. The following have sent correct answers up to

November 6th: Emma Waterman, 178; "Three of us,"

Maria and Lurana, A. T. Mary F. Judson and Belle

Curtis, Addison Millard, Sarah F. Brigham (nearly),

"The Yankee Family News," J. M. North and sisters,

179; Wm. W. Fuller, 178; George Ross, E. Jennie Peck,

179; George N. Wilson, 175; Louis and Mary, O. H.

Leavitt, J. B. Smith, T. H. Smith, A. L. Smith, F. E.

Smith, Jas. Dixon, Emeline Baldwin, Jennie Fletcher,

O. Harmon, Edwin Andrews, M. S. and M. Rice, 179;

Wm. C. Johnson, 175; E. B. Haskell; A constant reader,

W. J. Chamberlin, C. L. Spooner, Emily H. Abbott, 179;

Wm. D. Reed, 175; Niobe Robinson and Rowland Ro-

binson, Rebecca Shaw, M. F. and C. Benner, Lizzie A.

White, Midford, Wm. H. Paine, 179; Benjamin Heri-

itage, 175; Emiline Henry Bunn, Alice Bunn and Adda

Bunn, M. and M. Troth, Mrs. M. J. Allen, Freddie D.

Upton, Mrs. C. B. Carpenter, S. C. Smith, J. E. Smith,

Sarah H. Mead, Addie A. Smith, Frank S. Mead, E.

Linnie Lockwood, Samuel Dauchy, L. Dauchy, Edith

V. Smith, Julia M. Lockwood, Sarah Studwell, Mary

J. Studwell, 179; Thomas E. Lockie, James Dickson,

175; J. Marsh, 181; Garret Brodhead, Jr., 181; W. H.

Hughes, Jr., 179; George A. G., 179; E. Hart, 181.

\$50 in Prizes for the Ingenious.

The editor of the Puzzle Department believes some of the readers of the *Agriculturist* capable of solving every fair puzzle or problem, as none have yet been propounded to them, which they have not finally answered. Among so many ingenious minds there are undoubtedly many capable of constructing interesting puzzles. To draw out this talent and make it available for our readers, we offer the following

CASH PRIZES:

1. For the best *Mechanical Puzzle*, TWENTY DOLLARS. The wire puzzle, Vol. XXIV, page 253, and the string puzzle, Vol. XVIII, page 58, will give an idea of what is wanted. Let us see if an American Puzzle can not be invented which shall equal the celebrated Chinese Puzzle of wires and rings.
2. For the best *Arithmetical Problem*, TEN DOLLARS.
3. For the best *Hieroglyphical Rebus*, TEN DOLLARS.
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N. B.—In all cases the name of the author and the answer must accompany each puzzle or problem. All contributions must be received before March 1st; and the sooner the better. A competent committee will decide on the merits of the contributions, and the winners of the prizes will be announced as soon as practicable. No prize will be awarded, unless in the judgment of the committee the best contributions are worthy of publication. The proprietors of the *Agriculturist* are to have the sole right to publish any or all of the matter contributed. Now then, let us have some productions that would have astonished even the ancient Sphinx.

Our Holiday Picture.—(See page 26.)

Let us read and enjoy this beautiful picture together. First there is old Santa Claus, seated on his throne, the ruling spirit of the holidays. He visits most houses on Christmas eve, but we have sometimes known him to wait until New-Year's—perhaps because he could not get around in time, for, you know, he has a world of work to do. How he gets through with it all, we can not tell, but "when there's a will, there's a way," and you can see from his jolly face in the picture, that he has the will to make all the children happy. How delighted are those two little chicks in the corner, who have started up at the first peep of daylight, and are rejoicing at the overflow of good things from Santa Claus' store, right into their bed-room. No yawning, and turning over, and rubbing of eyes this morning, but they'll be out of bed with a spring and a shout. Who's that haggard, care-stricken figure on the left? He looks as though he had seen much trouble. And indeed he has. It is the Old Year, 1865. The small pictures in the corners near him show some of the sights he witnessed. Many a family had to fly from their burning home, pursued by a foe as pitiless as the raging flame. Many a noble heart was stilled forever by the hot strife that treason had provoked, and thousands more languished in hospitals, suffering from wounds aimed at freedom. But that is all past now, and we gladly turn to the other side of the picture, where the bright New Year comes with gladness in his face, to make the world happy. In New-York, and in most large cities in this country, New-Year's Day is celebrated by gentlemen calling upon their friends, as the artist has represented. It is a pleasant custom, and would be still more so, if all would agree to have no intoxicating drink upon their refreshment tables. We can't make a hundred thousand and more calls upon our readers, so we send this our card, wishing them all a HAPPY NEW YEAR, and so far as possible, we shall help to make every home in the land as pleasant as that in the corner of the picture.

The Pear Tree and the Grape Vine.

A young pear tree and a grape vine were planted beside a wall in a garden. Being in an out-of-the-way place, they were left to grow pretty much as they pleased, and according to its nature the grape vine sent out its branches in every direction, and with its finger-like tendrils grasped every object within its reach. Thus it soon looked wild and straggling, and perhaps merited the reproach which the pear tree cast upon it one day. "See," said the tree, "How I am rising into the sunshine, while you grovel on the ground among coarse low-bred weeds." And the vine could hardly help admiring the tall slender shoots, straight as an arrow, growing so vigorously upon the tree; but it quickly replied, "I am not too proud to associate with my neighbors." The tree felt the implied rebuke, and said nothing more at that time. In the fall when frost came, the tree being more exposed, first felt its biting effects; its leaves quickly withered and fell, while the grape vine being more sheltered, yet remained green. Then it taunted the pear tree, "Lowly comfort is better than miserable pride," it said—but its triumph was short, for soon it too was despoiled of beauty. Winter came and the vine, protected by the wall, suffered lit-

tle from cold, but the tender shoots of the tree were severely nipped. One day, however, a terrible storm prostrated part of the garden wall, and the grape vine was fearfully mangled by the falling rubbish. In spring both tree and vine felt humbled, and as they put forth their leaves they gladly greeted each other, and remained firm friends the whole season, so that a new shoot from the vine twined among the branches of the tree, and when autumn came, there hung a rich cluster of grapes beside a beautiful golden pear. One day the gardener noticed this, and calling his son, pointed out to him how the partial freezing of the shoots of the pear and the injury done by the wall to the vine had so pruned their excessive growth, that both had now for the first time borne fruit. Then as he worked with his pruning knife to bring them both to better shape and greater fruitfulness he said, "See how seeming misfortune may prove a real blessing." I was just thinking also replied the boy, how misfortunes will make friendships, for see how the new shoots that bore the fruit both came from the parts that had been most injured; and if some of our thoughtful boys and girls had been there, they would probably have said, that suffering may also teach forbearance and charity, and perhaps they would have thought of other good lessons which this short history conveys.

A Little Boy Moves a Great Ship.

We have somewhere read that at an English dockyard, a great ship was to be launched; an immense multitude assembled to see it glide down the slides that were to carry it into the water. The blocks and wedges were knocked away, but the massive hull did not stir, and there was much disappointment. Just then a little boy ran forward and began to push the ship with all his might. The crowd broke out into a laugh of ridicule, but it so happened that the vessel was almost ready to move, the few pounds pushed by the lad were only needed to start it, and away it went into the water. This teaches an important lesson to every boy and girl. You often think that the little you can do, is of no account. You don't know that. A little word, a kind act, however small, may be, and often is, the turning period in one's own history, and often of great importance in its influence upon others. A good deed, or the resistance of a temptation, may start up good thoughts in the mind of a playmate, which may suggest other thoughts and deeds. The train of thought in one's mind, is like a train of cars. The little frog or tongue on the track, no larger than your finger at its point, may direct the locomotive upon the right track, or if wrongly placed, it may turn the engine aside and hurl it down a steep bank to fearful destruction. So the smallest word or deed may start the mind on a right or wrong track. Dear young, friends, your little words, little thoughts and little deeds are important. Strive earnestly to be right, noble, generous, at all times, in secret and in public. When in the future we come to see the great map of human actions and influences spread out, it will then be found that you are daily and hourly exerting an influence that is telling upon the character of your brothers, sisters, playmates, upon your parents, upon all you come in contact with. Give a good push at the ship, do a good deed, no matter how trifling, whenever and wherever you can, and trust to God for the result.

An Impromptu Invention.

After Arkwright had invented the spinning jenny, he was much annoyed by the fibres of cotton sticking to the rollers, preventing their running smoothly. Mr. Strutt, inventor of the stocking frame, who was one of the first to properly appreciate the spinning frame, noticed this defect, and Arkwright confessed that he had tried in vain to remedy it. "I think I can cure it," said Mr. Strutt, "but it must be on condition of sharing the profits." Arkwright at once agreed to the terms, and Strutt immediately took a piece of chalk from his pocket, rubbed the roller thoroughly, and asked his companion to try the effect. The success was complete; the clinging of the cotton fibre was instantly at an end. The simple remedy had attained its object, the reward was earned, and thus Strutt became the partner of Arkwright.

Origin of Cast Iron Manufactures.

It is related that about the year 1700, one Abraham Darby, the proprietor of a brass foundry at Bristol, England, experimented in trying to substitute cast iron for brass, but without success until the following incident occurred: A Welsh shepherd boy named John Thomas, rescued a flock of his master's sheep from a snow drift, and later in the same spring, during heavy rain and the melting of the snow, he swam a river to drive home a herd of mountain cattle. Having collected them, on his return he found the stream had increased to a boiling torrent. He nevertheless crossed it on the back of an ox and brought home the whole herd in safety. As a reward for his courage, his master gave him four of the

sheep which he had saved. He sold the wool to buy better clothing, and with the money obtained for the sheep, traveled to Bristol to seek his fortune. To prevent being impressed as a soldier, he requested his master to recommend him as an apprentice to a relative who was one of the partners of Abraham Darby, and he was accordingly sent into the brass works, until he could find better employment. As he was looking on while the workmen were trying to cast iron, he said to Darby, he thought he saw how they had missed it, and begged to try a method of his own. He and Mr. Darby remained alone in the shop that night, and before morning they had cast an iron pot. He was at once engaged to remain and keep the secret, which he did faithfully, although double wages were offered him by other parties. For more than one hundred years after that night, the process of producing iron castings in a mould of fine sand with two wooden frames and air holes, was practised and kept secret at that factory, with plugged key-holes and barred doors.

Witty Temperance Men.

Several clergymen traveling together, were much annoyed by a fellow who had been drinking, but who feigned much of his drunkenness, that he might more readily attack the ministers. Standing near them he remarked, "Well, it's singular, yes it is, that I never get drunk only when in the company of ministers." He repeated something like this, when one of the gentlemen turned upon him, asking "Do you know the reason for it?" "No," replied the fellow, "perhaps you can tell me." "Because," said the clergyman, "when with such company you get all the drink to yourself."—This recalls the anecdote of Horace Greeley, who was once met at a railroad depot by a red faced individual that shook him warmly by the hand. "I don't recognize you," said Mr. Greeley.—"Why, yes, you must remember how we drank brandy and water together at a certain place." This amused the bystanders who knew Mr. Greeley's strong temperance principles. "Oh, I see," replied Mr. G., dryly. "You drank the brandy, and I drank the water." On another occasion the philosopher's wit silenced some of his office associates. Mr. Greeley had given an account of a wine dinner, and wrote that the party had indulged in Heideck and Champagne, these both being names for the same kind of wine. His associates laughed heartily at his mistake, which they pointed out to him. "Did I write it so," said he, with a good natured smile, "well I reckon I'm the only man in this office who could have made such a mistake."

A Sudden Cure.

A professed thief named Dugald McCaul, in the Highlands of Scotland, went out on an excursion one night accompanied by a young man who was learning the same trade. The latter was to take a sheep, while McCaul was stealing kale, and both were to meet in a neighboring church yard, where they would not be likely to be molested, as the place was said to be haunted. McCaul arrived first and sat upon one of the gravestones waiting for his companion. In a neighboring farm-house a crippled tailor happened to be at work, and the conversation having turned upon the church yard being haunted, he taunted some young men present with cowardice, saying that he would readily go if he were not lame. Upon this a young man offered to carry him there upon his back, which the tailor agreed to, and they were soon at the place. McCaul heard them, and supposing his companion had arrived with the sheep, inquired, "Is he fat?" "Fat or lean, there he is for ye," replied the terrified young man, throwing down the tailor and running away at full speed. Upon his return at the farm house, to the astonishment of all, he found the tailor close at his heels—his fright had given him the use of his legs, and his lameness was permanently cured.

"How do You Like It?"

This is a pleasant game for the fireside, and may be played by any number of persons. One is sent from the room, and the remainder of the company select some word. The absent one is then called in, and proceeds to discover the word by asking of each person these three questions: "How do you like it?" "When do you like it?" "Where will you put it?" The word chosen is usually one having two or more meanings, so that the answers may be made as puzzling as possible. Thus: suppose the word to be "Butt," which may mean a hinge, a cask, or a stroke with the head. The questioner asks, how do you like it. "To turn easy," replies one, "Very large," answers another, "Not at all," answers a third.—When do you like it?—"When I am building." "When I am packing," would be correct answers.—Where do you like it?—"On a trunk." "In the cellar," etc. When the questioner discovers the word, the person whose answer revealed it, leaves the room, and becomes questioner, and thus the game continues.



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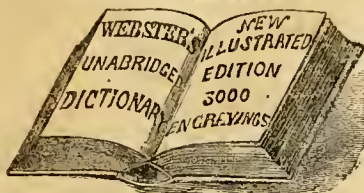
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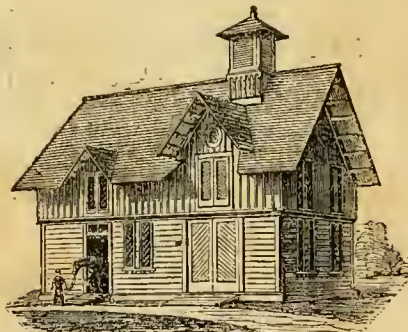
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JANUARY.

EXTRACTS FROM MRS. BRIGHT'S JOURNAL.

Have spent a pleasant day receiving New-Year's calls, and a merry hour at its close comparing experiences with my husband. Had the satisfaction of hearing my dress pronounced "stylish," and the pleasure of telling him that I made it myself. Thanks to my Wheeler & Wilson, I know nothing of what somebody calls "the wife's nightmare"—dressmaker's bills! * * *

This week I have given up to the usual calls of "the season." My friends compliment me upon my good health and spirits; and I think the cause of both is the freedom from anxiety resulting from a well-ordered household, which, without vanity, and simply stating a fact, I believe mine to be. The secret of it is that I insist upon having every thing done in its season, and never suffer the work of one month to accumulate upon that of another; consequently, I have few "housekeeper's trials," and can enjoy a leisure hour without the uncomfortable sense of something left undone.

Have just paid my usual evening visit to the nursery; heard the little prayers, given the good-night kisses, and left them to slumber, sure that "all is well" with my darlings. Mine should be "a calm and thankful heart," if a happy home, a loving husband, and sweet, healthful children can make it so.

FEBRUARY.

Went to the concert with my husband. He says that music being my only extravagance, he is obliged to indulge me, in spite of a reproving conscience. This is "his little joke" at my expense; for the extravagance is, to say the least, mutual, and he knows well that I should not enjoy music, or any thing else, if he did not share it with me. Moreover, he holds with me the doctrine that money is well spent which contributes to refine our tastes and beautify our lives. Therefore, the concert and all good music, wherever we meet it, comes under the head of "necessary expenses" in our domestic economy. * * *

A quiet, happy evening at home, put on record for another proof that the simplest pleasures are often the sweetest. A new book read aloud by my dear husband was the only entertainment; and my fingers were busy meanwhile—shall I tell it?—darning stockings! But that homely embroidery fitted well with Herbert Spencer's genial philosophy, and while I gained new ideas about my boy's education, I had a certain satisfaction in feeling that I was making comfortable provision for his toes also. Dear little toes! May the feet that own them stray into no by or forbidden paths.

MARCH.

"A man's work is from sun to sun, and woman's work is never done," says the old adage. But if the woman be wise enough to make herself mistress of a certain little household fairy, whose fingers never weary and never wear out, take my word for it her toil need not outrun the daylight. It is such a pretty little fairy, too, so obedient to all my behests, so swift, and so sure! I take a fancy to ornament little Alice's frock with braiding, and lo! the fairy fingers fly in and out of the complicated pattern, reproducing all its curves and angles with mathematical precision. I want a tucked skirt, and in an hour the spaces are marked, the tucks folded down, the neat stitches set like rows of seed-pearls. I have a dozen handkerchiefs to hem, and before these mortal fingers (not clumsy ones, either) could have finished a single one, the whole set are completed. The greatest charm of this fairy is that it possesses the faculty of multiplying itself indefinitely, so that every woman may command its services for her own household. And for my part, I would dispense with many luxuries for the sake of securing such services, if I were not so fortunate as to have them at command already.

APRIL.

Had a spare ticket for the last Philharmonic rehearsal, and called for Mrs. Blank, thinking she would like to accompany me. Found her up to her eyes in plain sewing—"would like to go dearly, but couldn't possibly spare the time;" which I thought very odd indeed. Her family is no larger than mine; her income no smaller; yet she never seems to have time for the simplest recreation. One is tempted to be uncharitable and ask: What can the reason be, meanness or bad management.

Spent an hour at my sewing-machine this morning braiding a sacque for Charlie. My husband laughs at what he calls my propensity for finery. But if I have a weakness it is to see my children well dressed. Comfortable and neat, of course, they always are; and when I can make their little garments beautiful also, at small cost of time or money, where is the harm? "Solomon, in all his glory, was not arrayed like" the lilies of the

LADIES' COLUMN.

JANUARY.

EXTRACTS FROM MRS. BLANK'S JOURNAL.

Vexed my husband this morning by refusing to receive New-Year's calls. He declares that I grow more unsociable every year, and I dare say it is true; but how can I help it? The new year brings me only new cares, and still I sing "with a dolorous pitch," the same song of "stitch, stitch, stitch." * * *

A call this afternoon from Mrs. Bright. She is no younger than I, and perhaps no prettier, yet I was conscious of a contrast not at all to my advantage. How fresh, and handsome, and happy she looked! How faded, and careworn, and sad I felt. What is the secret of the difference, I wonder! * * *

Am hard at work in mid-winter, upon garments which should have been finished in the first of the season. Poor little Ellie is still wearing her thin Summer flannels, because the older children must at least be made respectable for school, and I cannot do everything at once. I do my best, yet I seem to be always pursuing my work, never able to overtake it. * * *

Little Ellie is sick to-night, tossing in her sleep, hot with fever. I sit by her crib, sewing upon the flannel skirts at last, and feel sorely that the want of them has caused her illness. Yet how could I help it?

FEBRUARY.

Tickets for the concert sent unexpectedly by a friend, but my husband did not come home, so was unable to use them for want of an escort. Got only this, by way of comfort, when he did return: "How could I know you wanted to go? You never go anywhere. And what is the use of my coming home, to sit alone down stairs, when you always stay in your own room? Don't blame me for your disappointment; it is your own fault." Is this true, really, and am I then so much to blame? God knows it is not for my pleasure that I sit alone evening after evening, plying the weary needle; not for my happiness that I know him seeking his enjoyment in people and things apart from me. Yet what can I do? Is it not a hard alternative when one has to choose between neglecting one's husband or one's children? * * *

Nothing pleasant to record this evening, which is, alas, nothing new. Busy all day with my needle; too tired and dull to welcome my husband at night very cheerfully; considered "cross" in consequence, and tempted to deserve the title by being so in reality. Do marriage and maternity necessarily mean slavery? Taking my daily life for example, the answer would be a bitter affirmative.

MARCH.

Have accomplished little or nothing this week, owing to little Ellie's illness. She has been just sick enough to want continual petting and nursing, and of course it is only I who can do it to her satisfaction. Why is it that children always tyrannize over their mothers, I wonder!

Looked wofully this morning toward the pile of work which has accumulated during Ellie's illness. Stockings to darn, trousers to patch, aprons to mend, frocks to make, shirts to cut out! One pair of weary hands to do it all—one heavy heart to bear all the complaints and annoyance that arise when it is not done. There is a reason for all things, it is said, but I confess I cannot see why my life should be wasted in this hopeless sort of toil. I would not complain if the results were adequate to the labor; but I have so little to show for my day's work; so much more than I can possibly do is left undone. Yet I give myself wholly to these household duties, even to the neglect of what I feel to be better things. My mind is narrowed down to the range of my work-basket, my aspirations confined to the circle of my needle; yet even that poor ambition meets perpetual failure.

APRIL.

Refused an invitation to go to the Philharmonic with Mrs. Bright, who looked surprised when I gave want of time as an excuse. She seems to have plenty of time for going out, though one would think her family cares would confine her as much as mine. Perhaps she neglects her children to take her pleasure! When a mother goes to so many concerts and lectures, reads all the new books, entertains company, and all that sort of thing, it's very apt to be the case that the children's stockings are not darned, nor their petticoats mended! * * *

Worked since early morning and till near midnight on a Spring dress for Annie to wear to school. Had to go to bed at last and leave it unfinished, with the pleasant anticipation of her disappointment to-morrow. "She is so tired of wearing her old merino!" And no wonder. The children are known by one dress before I have time to make them another; although they have no superfluous work on them either. Annie complains sometimes, poor child, of her untrimmed frocks; and I answer her

field; but are not the lilies of the field, and all the other blossoms that God has clothed with beauty, examples in a certain sense, and excuses for personal adornment?

MAY.

A great misfortune happened to day. Poor little Alice experienced her first grief in the loss of a tiny black-and-tan terrier, "Jet" by name, who died suddenly this morning. The little creature has been her pet for a year, and she is heart-broken at his death. Have been trying to devise something for her consolation, and think I will take her with me this afternoon, when I make my donation-visit to the Church Charity Foundation. * * *

Found my idea a good one. Alice was delighted with our excursion, quite falling in love with the poor old ladies and helpless little orphans at the "Home." It is her first glimpse into such an institution, and I was surprised to see the intelligent interest she manifested. One child attracted her special attention—a bright-eyed little thing called Jessie, and, singularly enough, nicknamed "Jet." I saw Alice's eyes fill up at the familiar sound, and presently her little hand stole into mine: "I should like to give her something, mamma; may I?" So allowed her to choose a book from my basket, and watched the presentation, which gave at least as much pleasure to the giver as the recipient.

JUNE.

A delightful afternoon at the Academy of Design—Frank and Alice with me, as they have been every year since old enough to go out with me at all. I think one cannot cultivate artistic tastes too soon in children, so take pains to have mine see pictures, statues, curiosities—everything beautiful that is within our reach; and, from the first, I make a point of teaching them to observe and discriminate, that they may enjoy things intelligently—not merely for show or glitter. The reward of my trouble comes to me already; for Frank's comments and criticisms this afternoon were (without being in the least priggish or unchildlike) so sensible as to make him a most agreeable companion. * * *

Celebrated little Helen's fifth birthday with a doll's tea-party. Invited ten little girls with their dolls, and gave up the afternoon to the entertainment, which passed off without a cloud. Confirmed in my creed that any outlay of time and trouble which goes to make children happy is a profitable investment.

JULY.

Practised industriously for two hours this morning, "making up," as it—mischievously says, "for time lost at the sewing-machine." The "household fairy" has just accomplished, under my supervision, six new shirts for his lordship; not to speak of a host of brown holland aprons for Charlie and Helen, and some stout gingham frocks for Alice—these last for country wear. Which, according to my practical view of things, was time very well "lost!" Still, I must not neglect my music, for I know its value too well as one of "the ties that bind" us in household unity and harmony. * * *

A busy day packing for the country. We have been fortunate enough to secure board so near the city that my husband can attend to his business, and still spend the evenings with his family. My house is in order, my Summer sewing all done, the children provided with everything needful; and I look forward to a happy holiday.

Have arranged our little apartments so that they begin to look homelike. Two or three engravings on the walls, some books, my work-basket, and Alice's canary in the window, give the familiar aspect; while the lovely outside views of woods and river, upland and meadow, atone for all deficiencies within.

AUGUST.

Went down to the river for a swimming lesson to-day. Frank learned to swim last summer, and has undertaken now to teach the children and myself. No great progress as yet; but we all splashed about, and had a merry time. A sudden cloud came up while we were still in the river, and gave us a shower-bath in addition to the plunge. The effect of the rain-drops upon the water, seen from the midst of them, was exceedingly beautiful. * * *

Some new arrivals from the city this afternoon, among them an acquaintance—Mrs. Blank. Met her unexpectedly on the piazza, and had the pleasure of rendering her some little service, which she appreciated almost too gratefully. Am glad of the opportunity to improve my acquaintance with her. * * *

Went up to Mrs. Blank's room, to ask her to join us in a "crabbing" expedition. Found her sewing, as usual, and too busy to go. I discovered at last, however, the reason why she never has time for anything: she attempts to do her family sewing without a sewing-machine! No wonder her work is never done. Gave up the crabbing party, and told her of my experience of the "household fairy," which so astonished and delighted her that she is determined, at any sacrifice, to have one for herself.

with mild moralities about the beauty of simplicity, and the sin of vanity; which silence without satisfying her, and leave me self-reproached for preaching what I would not practice, except through necessity.

MAY.

A most unhappy record to-day. Came down to breakfast, worried and irritable, and found Arthur holding a young canary bird in his hand. "Look, mother," he exclaimed eagerly. "Harry Warren has given me this dear little bird; his mother let me choose the prettiest one in the nest." "And what are you going to do with it?" I asked impatiently, some evil spirit making his happy excitement utterly distasteful to me. "Why, keep it, of course. You'll get a cage for it, papa, won't you? I've wished for a bird so long!" and his imploring look at me should have been enough to dispel the hateful feeling. But not so. I answered hastily: "No such thing. Your father cannot afford to buy cages, while so many things are more needed. Carry the bird back again; I can't be bothered with it." Almost before the speech was ended, I had repented. But it was too late then to recall it. Arthur was too proud to remonstrate, and without a word marched out of the room, coming back no more. My husband gave me one look—that was all. The meal passed in miserable silence; the day has gone by as wretchedly; Arthur avoided me in proud resentment—my own conscience my sorest punishment.

JUNE.

Spent the afternoon shopping on Broadway and Canal street. Getting into the stage, tired and heated, my hands full of small parcels, and my spirits dejected in the recollection of how much money I had spent, and how little I had to show for it, I encountered Mrs. Bright, and two of her children, all three looking provokingly like their name! They were dressed so charmingly in the freshest of spring attire, and had been to the Academy of Design. "Had I visited the Exhibition this year? Was I not delighted with those lovely girl-faces of Wentler's? those delicious little landscapes of Shattuck's?" and so on, and so on, till I felt more dejected than ever in my painful consciousness of a contrast, not to my advantage, that Mrs. Bright's presence always forces on me. She takes life easily. I wish I had her secret. * * *

Poor Ellie gone to bed in tears. She and her doll were invited to Helen Bright's birthday party, but the doll—significantly named Flora McFlimsey—had, like her namesake, "nothing to wear." Ellie would not go without her, and I feel self-reproached for her disappointment. I ought to have dressed her doll long ago; but how can I, with so many human dolls wanting dresses?

JULY.

Bridget's evening out, and I took her place in the nursery, to guard the sleeping children. A feeling, half ludicrous, half pitiful, took possession of me as I sat there sewing; a wish that I was servant instead of mistress, that I might have the privilege of at least one evening in the week to spend as I pleased! Ridiculous, of course; nevertheless it is painfully true that I do not have as much time for recreation as my own servants.

Third of July, and to-morrow the awful Fourth must be endured, with its multiplied miseries of run mad, frightened babies, servants "on a rampage," etc., etc. Wish I could have escaped into the country, as Mrs. Bright did; but, alas! there is a mountain of sewing to be leveled before I can attain to the breezy hills and shady woods that I sigh for. * * *

Baby grows thin and fretful—the heat seems unusually oppressive this summer—and his father is very impatient to get the children out of town. "How long before you can be ready?" he asks almost daily. I am straining every nerve to get through the necessary work, but it will be August before the children can be ready.

AUGUST.

Out of town at last through much tribulation. My husband declared that the children must wait no longer if they went without clothes; so packed up what remained of my work to finish in the country and started off yesterday. The journey very unpleasant, owing to heat and intolerable crowding; but our boarding-house promises to be comfortable, and the country around is beautiful, with ample range for the children. Found (to my advantage) that Mrs. Bright and her children had been here since the 1st of July, and was a favorite in the house. Under her direction much more attention was paid me than I should otherwise have received, and in many ways she has been exceedingly kind. I remember (to my shame!) that I have sometimes had uncharitable thoughts about her. * * *

There is a remedy, we are told, for every evil under the sun. Mrs. Bright asserts, with encouraging confidence, that a Wheeler Wilson is the remedy in my case. I have seen for myself how easily her household cares sit upon her. I have also seen that her children are not neglected, as I once imagined. If a sewing machine is as efficient a helper as her experience seems to prove what price would be too dear to pay for it?

SEPTEMBER.

Have tested an idea which came to me some time ago, and found it worthy of record. It was simply to suggest for Alice a permanent instead of temporary interest in the little orphan Jessie, and show her how to turn it to good account. Which I did accordingly; and it is now one of her chief interests to work for little "Jet." She saves her pocket-money to buy books, or playthings, or small articles of dress for her, and gives up many of her play-hours to sewing for her. What she can do is of course nothing very important in itself, but I encourage it for its influence upon her own character, and see already the good effects. Her sense of responsibility makes her thoughtful and womanly; and where before she was rather inclined to self-indulgence, this new interest has taught her practical lessons of self-denial. May these be only first fruits of a life rich in good works and charity. * * *

Attended a bright little dinner-party last night, at Dr. R—'s. Met several celebrities of the pencil and the pen, who for once were as enjoyable personally as in their books and pictures.

OCTOBER.

Celebrated the anniversary of our wedding-day by a drive in the park, a stroll down the Lovers' Walk, and a row across the Lake. The day was heavenly, with its soft misty sunshine and brilliant Autumn foliage, and our own hearts harmonized with all its loveliness. Thirteen years since we were married, and it seems only yesterday! But such happy, loving years press lightly. On the Lake, floating in one of those fairy-like skiffs among the swans and water-lilies, it grew poetical, and repeated those four loveliest stanzas of "The Miller's Daughter":

"Look into mine eyes with thine, true wife"

But as for me, I could only think of the sweet old hymn, "When all Thy mercies, O my God!" for one verse had been in my mind all day:

"Thy bounteous hand with wordly bliss

Has made my cup run o'er,

And in a kind and faithful friend

Has doubled all my store."

Paid my annual subscription to the "Association for the Relief of the Industrious Poor." This charity especially interests me, because it is based on a sound principle—employment furnished to the destitute, and full value paid for the labor. Thus self-respect is preserved while distress is relieved.

NOVEMBER.

Another birthday to be recorded; not celebrated by a doll's tea-party—Alice is too old for that—but not less lovingly commemorated. Her father's gift was an engraving of Ary Scheffer's "Temptation," one of a set of scriptural subjects which he is collecting for her, and in which she takes great enjoyment. Frank bought her a dainty copy of "The Children's Garland from the Best Poets," and my own gift was the published record of a beautiful life not long since ended, the "Memorial of Alice B. Haven"—rather mature, for her present age, but she will appreciate and, I trust, emulate its sweet lessons of faith and charity in after years. * * *

A busy and pleasant day, spent chiefly in making up on my sewing-machine a number of garments for Christmas distribution amongst the poor. * * *

An hour at the piano with Frank. It is one of my fancies that the influence of music at home and the power to produce it themselves, goes a great way toward keeping boys out of mischief; so have taken pains to teach Frank carefully, as well as Alice, in anticipation of the time when we can afford masters. * * *

DECEMBER.

A merry evening with the children, preparing decorations for our Christmas tree. The little ones, who still keep faith in Santa Claus, were safe in bed, but Frank and Alice assisted gleefully in making cocked hats, cornucopias, and candy boxes, and even papa condescended to lend a helping hand. We adhere religiously to all the time-honored observances of Christmas; endeavoring to make it not only a merry holiday, but a special occasion for inculcating by precept and example the sacred lessons of Him who came to bring "peace on earth, good-will to men." * * *

Packed and sent away the usual "Christmas boxes"—a gown for Widow McCaulay, a basket of groceries for Mary O'Neil, a doll for little motherless Janie Thompson, and other such simple offerings. With the longing in my heart to do so much more, this encourages me: "A cup of cold water only shall not lose its reward."

To-day brings the close of the year marked with fewer cares than blessings; and the last page of my diary, not always faithful in recounting them. Let the final record at least be one of thankful acknowledgment for the "unnumbered comforts" that have surrounded me. Also, a prayer for the "calm and thankful heart" that is free alike from "murmurs" and "vain confidence."

SEPTEMBER.

Have discussed the sewing-machine idea with my husband, and find, to my satisfaction, that he heartily approves of it. A little economy in other expenditures will enable us to purchase one, and my heart is already lightened, in anticipation of the burden of Fall work. For the last week, at least, I will give myself up to the full enjoyment of these lovely September days, with their misty skies and faintly turning leaves. I will roam the fields with the children, in search of wild grapes, take swimming lessons in the river, join "crabbing parties," and "bob for eels!" Also, I will explore the windings and hidden springs of that laughing brook in the woods, and in some green nook, with rippling water and murmuring leaves about me, I will read Jean Ingelow's poems. Who can tell? Perhaps the time is coming when I shall have leisure to read when I please. Just now, an idle hour with a volume of poems seems the rarest luxury. * * *

Home again, and the burden of household cares dropped for a while, must be taken up once more. Fall sewing, fall house-cleaning, pickling and preserving; sending the children to school, and getting settled generally! But I bring to life task new energy—boon of rest and hope.

OCTOBER.

The important purchase has been made, and I am really the owner of a sewing-machine. I walk around it with a sort of awe, fingering the mysterious hooks and gauges, and wondering shall I ever comprehend and make available its delicate mechanism! Mrs. Bright assures me that I shall, under the careful instructions furnished by Messrs. Wheeler & Wilson. I go this morning to their beautiful rooms on Broadway for my first lesson.

Gave Arthur for his birthday a present which will make him forget my unkindness about the canary-bird. It was, in fact, the same bird, which I look pains to obtain, and for which I bought a pretty cage; denying myself a new pair of gloves that I need in order to do so. A small enough sacrifice to atone for my fault! Hung up the cage in the dining-room window, and laid a little note on Arthur's plate, signifying his ownership. The quick tears in his eyes, the warm color flushing his brow when he read it, expressed everything without words. I knew that he understood all I mean by the gift; and his look of loving gratitude made me able, for the first time, to forgive myself.

NOVEMBER.

Fall sewing almost done; thanks to my invaluable sewing-machine. It has been all that I hoped—more than I dared to anticipate—in the way of assistance; and, indirectly, other advantages flow from it. My husband looks up with a smile when I take my seat after dinner: "Not quite so exclusive as you used to be!" And the children: "Oh! mamma sits down stairs every evening now. Isn't it a great deal nicer, papa?" It is pleasant to feel that my presence is the attraction for all of them; and I inwardly resolved that it shall not be lacking in future. I will "use all diligence" to retain and perfect the family reunion, not forgetting to be thankful for the opportunity to do so. * * *

Played and sang with the children this evening while they practised some Christmas carols for their Sunday-school concert. Looked over my shoulder—hearing a manly base suddenly in the "Three Kings of Orient," and met my husband's eyes, with a look in them that said: "This is what I like." So prolonged our rehearsal till the children's bed-time; and finished the evening with a game of chess, in which I had the satisfaction of checkmating him—purely by accident, as he conceitedly declared.

DECEMBER.

A couplet from Stoddard's charming version of "The Children in the Wood" has flitted through my brain all day:

"And leaf by leaf the rose of youth
Came back to Lady Jane."

Truly I am younger as well as happier, now that the weight of a forever-unfinished task is lifted from me. I shall never cease to be grateful to Mrs. Bright for introducing me to her "household fairy." It has proved to me more than that—a household angel. * * *

"Merry Christmas" is at hand once more, and all hearts are attuned to its gladness. The children are full of important secrets. Mamma has hers also; among them a marvelously-dressed doll that will gladden Ella's heart, and a braided dress that will satisfy Annie's wildest desires. Suspicious-looking parcels are smuggled into the house from time to time, showing that papa has his little mystery, too, and I think I shall not much longer covet that copy of "Melodies and Madrigals!" We do not forget, either, these little children of God in whose homes no Christmas-trees grow. Our good cheer shall be shared with them, for His sake who said, "Inasmuch as ye did it to one of the least of these, ye have done it unto me."

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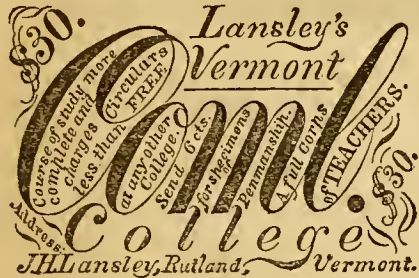
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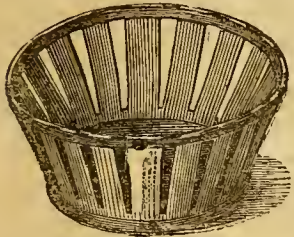


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Crates for 12 quart baskets,	\$50 per Hundred.
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Doty's Clothes Washer AND CHURN POWER.

NOW WARRANTED TO RAPIDLY CLEANSE THE DIRTIEST CLOTHING

Without Rubbing!

The Proprietors are happy to announce that their late improvements and the discovery of a more efficient process of washing, enable them now to WARRANT their great

Clothes and Labor Savers,

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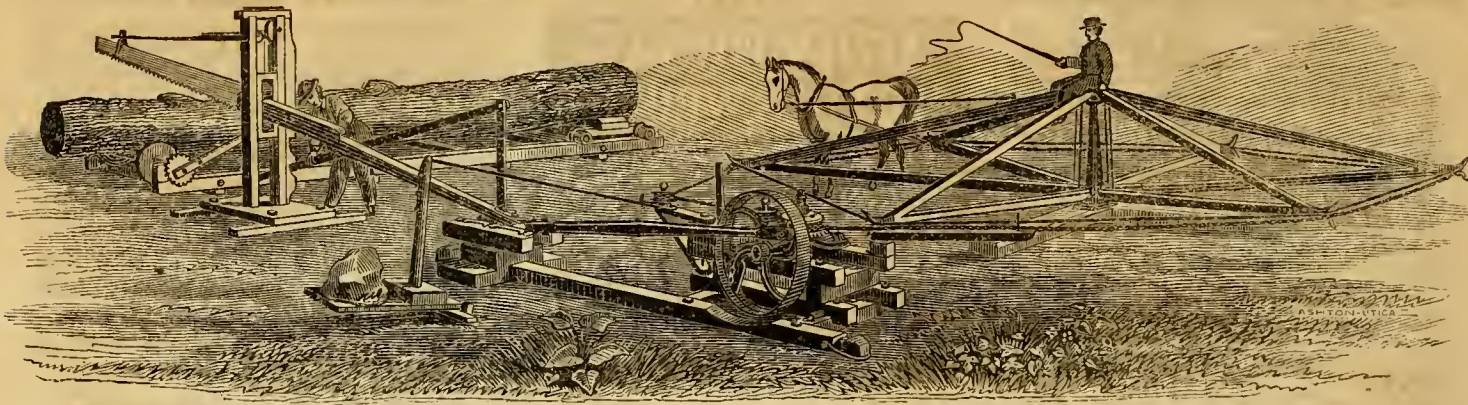
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PHILADELPHIA, 11th month, '65.

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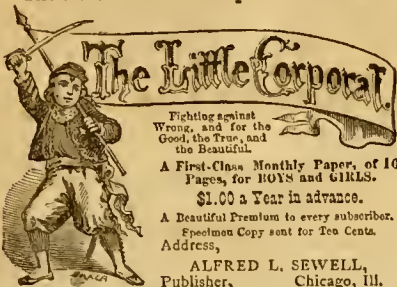
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AMERICAN AGRICULTURIST.

NEW-YORK, FEBRUARY, 1866.

A month goes by very quickly, and January seems to us always to speed its flight more quickly than other months. Only a few days ago we greeted the New Year with its hopes and promises, now it is already old. The lessons of the new year may beat any time properly laid to heart. We always plan for the future, for improvement, for higher success. We always have the past with its experiences, of prosperity and adversity, of success and failure to draw lessons from. We are now approaching the season of hard work, and he that lays carefully his plans with reference to it, will save himself not only labor, but perplexity and anxiety enough to make all the difference between a life of comparative ease and satisfaction, and one of annoyance and worry. Good plans are the lubricators of a farmer's life. Wheels with well greased axles contentedly "purrr" along the road. Work without plan drags, and like a squeaky wagon distresses even the passer-by. Let us then lubricate,—and if our readers will use our hints as their wagon jack, they may put the running parts of their farm wagons in good order, so that they will not require half the team when the ruts are deep, and before the roads are settled for the season. It is a poor time to stop and grease axles when the team is floundering in the mud.

Hints about Work.

Our effort in these "hints" thrown out from month to month is not to be repetitions. Still there must almost of necessity be a little sameness, and we fear some of our readers avoid these pages with the thought that they contain the same things over and over again. This is a great mistake. Few pages are the result of more thought or contain more valuable ideas. While upon the subject of spring work we are led to consider the

Working Animals.—On these the farmer depends for almost every thing of success. They are as necessary to most tillers of the land on a large scale, as is the soil itself. Their good condition for labor is just so much capital. The abominable farming which still in many parts of the country regards "spring poor" stock no disgrace to their owner, and looks upon the condition of leanness, which many oxen and steers present in the spring, as perfectly natural, cannot come under too strong reprobation. It is not only cruel in the extreme, but damaging to the farmer's own interests to the last degree. Poor stock given out soon in plowing and heavy work. Four oxen will hardly do the work that two should. Pluck and endurance may be accurately measured by condition.

Beef Stock kept stalled, will gain very rapidly as the weather moderates. The meal or oil cake fed should, if any thing, be increased.

Cows which "come in" in the spring should have good hay or cut feed (stalks or straw) with bran upon it, and if possible some roots daily. They at least need warm sheds and sunny yards. Good stabling at night and in cold weather, and warm sheltered yards on pleasant days, will make not only a cow's paradise, but reward the farmer with fine calves, and a better flow of milk. It is especially important that

Sick or accidentally disabled animals be confined away from the herd, as soon as the injury or sickness is discovered. When cows are near their time, an accident to one causing "slinking" will be very likely to cause the same disaster to several. Every stock yard should have one hospital, and many an animal may be preserved from severe sickness by taking it from the herd and changing its diet, blanketing, currying, etc., for a few days. Never "doctor" animals by guesswork. In the anxiety to do something, many are just as apt to do the wrong thing as the right. Consult your family physician in severe cases; if he is a humane man he will think it no unwarrantable liberty; or watch the symptoms carefully and consult the druggist.

Horses.—It is quite common for large horses to have swollen legs in winter, especially if they are not kept in regular use. The same horses in summer, especially if more or less in the pasture, are not troubled in this way. These enlarged legs indicate a weakly constitution. In a system perfectly vigorous, these secretions would work off and leave the limbs clean and smooth. The proper treatment in winter is to keep the horse in fair condition, not fat, and allow him to stand a part of each day in a roomy box (or large stable) where he can walk about a little. Then he should have regular out-door exercise, not less than an hour daily. The legs should be rubbed dry and clean after each exposure to mud and snow. Indeed, the more "elbow-grease" expended in rubbing the legs, the better.

Brood Mares that are kept tied in stalls, should have an opportunity to exercise every day, either in the yard, or by moderate driving. A liberal supply of water is also essential, as we have known mares to "slink" when they did not get drink for a day or two. Work-horses not required to labor, should be driven moderately at least once a day, several miles. Teams that are worked hard all winter, endure the severe fatigue of plowing, harrowing, etc., much better than if worked but little during the cold weather.

Water for Stock.—When water must be pumped for all kinds of stock, in very cold weather, the weaker ones sometimes fail to get a suitable supply, as the surface freezes over, or the master animals drink the limited quantity that boys and lazy men will draw for the entire herd.

Sheep.—Every animal, whether old or young, that does not get its proper allowance of feed, or that requires a little extra care, should be separated from the flock, and provided with comfortable quarters and better feed than strong and healthy sheep receive. A few old ewes and the weakest lambs may occupy a small apartment together. Mutton sheep, as well as those to be kept over, should have a few roots daily, to prevent the stretchers. Ewes that are near yearning should be confined in a spacious, but warm apartment, so that the lambs may not be chilled and lost by exposure to cold. Hemlock and pine boughs are excellent for all kinds of sheep, and are a substitute for roots.

Swine.—Breeding sows require care this month. Do not feed them much meal. They require bulky and light feed. Skimmed milk with bran, or oatmeal and boiled potatoes are the best feed. The best feed for young hogs designed for heavy pork next autumn, is equal quantities of oats and peas, ground and mingled with milk and slops from the kitchen. Let all swine have warm and clean apartments, well supplied with dry straw. Swine will eat a small quantity of light clover hay, and if it be cut two inches long, all the better. Occasional feeds of raw roots of any kind will be good for them.

The Wood Lot receives at this season more attention than at any other. All agree to the desirableness of cutting firewood in the winter, but in regard to felling timber for other purposes, there is considerable dissent. Trees that have ceased to grow rapidly, only cumber the ground. Such are usually recognized with ease, by the peculiar mossiness of their trunks, and the scattered dead limbs, and with a little calculation they may be felled without injuring growing timber. See an article on this subject on page 372, December, 1865. No trees should be cut now for timber, which leaf out early and require only a few warm days to fill them with sap, like the maple, birch, beech, etc. Oak, hickory and ash may perhaps be cut now as well as earlier. Sticks of hard wood for wagon tongues, sleighs, farm implements, etc., may be cut now, and be "sticked up" that is piled with sticks between them, so that the air may circulate among them that they may season uniformly. It is very important that

Fencing Stuff especially that for posts, should be split out, peeled, and piled up to season before being set; and the same is true of bean and hop poles, wood for grape trellises, stakes, etc., to insure durability. Good sledding must be improv-

ed to haul timber of all kinds out of the woods, or to and from the saw mill.

Waste of Fuel.—One way in which farmers often waste fuel, is by chopping the logs into suitable length for the stove, instead of sawing them. The waste in chips, as well as labor, is considerable. Another waste comes from allowing the wood, after being prepared for fuel, to lie out of doors for several months, exposed to all weathers. Wood should not necessarily be housed while green; but after the winds of March and April have blown through it, it should be got under cover. Otherwise, it becomes "dozy," and loses much of its value. If housed early, it will remain hard, almost like anthracite coal, and will last very long.

Winter Wheat.—See that no water stands on winter grain. During mild and thawing weather, when wheat sown in drills has been partly lifted out by frost, it will often pay to haul half an inch of dirt with hand hoes over the roots. This will save them from further injury by freezing and thawing. Usually, however, the earliest field work, preceding even that "clearing up" and setting to rights which every farm gets after the weather is settled, is

Seeding to Grass and Clover.—This may often be done in February if the ground is bare and the frost so far out that there is little danger of washing by heavy rains and thaws. Procure the best seed you can of such grasses as you wish to sow; Clover, Timothy, Orchard Grass, Kentucky Blue Grass, etc. Obtain samples of the dealers which you may carefully examine for weed seeds, and the excellence of which may be tested, before buying large quantities. Sow upon winter grain when the ground is stiffened by frost or a light snow.

Spring Grain.—Decide now what you will sow, and secure the best seed possible. If you sow seed of your own raising, select by repeated winnowings the very plumpest and heaviest kernels, and treat that which you buy in the same way, if you can afford to. Commence also at once to collect

Seeds of all Kinds, concerning which see hints in other parts of this number. During the present month, also, is the best time to secure

Good Farm and Garden Hands.—The prospects, as we judge, are, that there will be fewer applicants than places, even though the war is over and the great armies disbanded.

Work in the Horticultural Departments.

As we write, the mercury without is so far below zero that it seems almost impossible that it should get far enough above, this winter, to allow of much out-of-door work. Yet as we generally have had mild spells in February, it is probable that they will occur this year, and if they do, the notes in January will suggest several things that may be done, which are unnecessary to repeat here.

Orchard and Nursery.

The demand for nursery stock from the Southern States is already large, and will rapidly increase. Trees, etc., to fill these orders have to be sent off as early as possible, as in many southern localities February is the suitable month for planting. In packing and shipping trees at this season, great care must be taken to guard them from freezing during the transit. Those who find the trees frozen when they are received, should bury the roots in earth and allow them to thaw gradually. A mild, damp, drizzly time should be improved to give

Old Trees—and young ones too if they show any signs of bark-louse—a washing with some alkaline preparation. Soft soap made sufficiently thin to work with a whitewash brush is as efficacious as more expensive and troublesome preparations. Go over the tree with this, and the rains will complete the washing. Unless the tree is in a very bad condition, no scraping will be needed after this wash.

Grafting is frequently done too soon. In some parts of the South grafts may be set this month; it is best to postpone the operation until the buds begin to swell. Those who go about renewing

orchards by grafting, may say that it makes no difference how early the work is done, as they wish to make their season as long as possible; but it will be found that where cions remain a long time exposed to the drying winds of spring, their chances of succeeding are much lessened. A correspondent takes exceptions to our advice to bury

Cions in the earth of the cellar, for the reason that the earth there is so impregnated with nitre and other salts as to injure them. In old cellars this objection may exist, but we had in mind such a cellar as we had been accustomed to use for the purpose, where the soil was very sandy and the difficulty alluded to could not occur. Where there is any doubt about the suitableness of the soil for this purpose, the cions may be packed in pure sand or in moss; both these materials should be kept slightly dampened. The ends to be attained are the preservation of the natural moisture of the wood, and a temperature which is so low that the buds will not be excited to swell, and yet not so low as to freeze. The necessity of sending

Orders to Nurserymen as early as possible, was mentioned last month and should be borne in mind.

Fruit Garden.

But little can be done beyond seeing that no injury occurs from heavy storms, from stray quadrupeds and careless bipeds. With many it is the custom to take the "shortest cut" when snow covers the ground, and to go over the snow in a straight line on foot, or with vehicles, regardless what may be under it. The fruit garden should be so situated that there is no need of passing through it, but if this is not the case, take measures to keep any one from trampling on and injuring the beds.

Grape Vines which were neglected last fall, may be pruned in a mild spell, as may

Currants and Gooseberries.—The wood from these may be used for cuttings, as also that of the vine, but it is not as good as that taken in autumn.

Kitchen Garden.

The market gardeners around New York start their hot beds in February, but this is too early by a month for any but professional gardeners. The best time, which will of course vary with the locality, is about six weeks before the season at which plants may be set out with safety. Every thing should be made ready in advance. The manner of constructing frames, etc., is given on another page.

Manure in abundance should be in readiness. It is best to keep it under a shed where it will not be exposed to heavy rains. The heap should be forked over occasionally to prevent the center from becoming dry and overheated; by forking it from one pile into another it becomes uniform throughout, and if too dry it can be watered. Use will now be found for the

Leaves, the gathering of which we have so often advised. By using from one-fourth to one-half as much leaves as manure, there is great saving of manure, and a more uniform and enduring heat to the bed. A rich light and rather sandy

Earth will be needed for the bed, and if this has not been provided for beforehand, take advantage of a thaw to secure it, provided it is not too wet to move. Then the sash will need covering during cold nights, and perhaps during some cold days also. For this purpose nothing is better than

Straw Mats, made large enough to cover a sash. They are easily made by stretching a warp of twine, and laying neat handfuls of straw upon it, butts out towards the edges of the mat, and the tops overlapping in the centre, and lacing each handful in place by means of small twine.

Shutters made of boards fastened together with cleats, are also used. In absence of this an old carpet, or even loose straw thrown over the glass is better than nothing, to prevent loss of heat by radiation during the night.

Cold Frames in which cabbage and other plants are wintering, must not be neglected. Air whenever the weather will allow, and take care that mice

do not destroy the plants. When the ground is thoroughly open, by thawing during a mild time,

Horse radish may be dug for use or market, as may **Parsnips and Salsify,** and thus make the stores in the cellar last longer.

Onions that have frozen should be kept from thawing by covering them with hay. A freezing does not injure them, but frequent freezing and thawing disposes them to decay. Market gardeners do not take the trouble to put brush to their peas, but in private gardens it not only contributes to neatness, but increases the yield, to give all but the very dwarf kinds a support. Lima, and other beans also need something to run upon.

Brush and Poles are best got in winter. Nothing looks more slovenly, than these if cut after the leaves have developed. See last month for hints on their preservation. If one has a green-house, or a warm light room even, a few strong roots of

Rhubarb may be forced to give early stalks. Take up the roots and place them in tubs or boxes of earth in a warm place, and they will soon throw up leaves, at the expense of the roots. Every source of

Manure should now be at work to its fullest capacity, as suggested last month.

Seeds will of course be needed, and this month is the one in which to attend to the matter. For those who are in doubt what to buy, we have given on page 61, a list that will aid them, and all inexperienced gardeners should read Mr. Henderson's excellent hints on page 59.

Flower Garden and Lawn.

In the more genial climate of the Southern States the gardener may proceed with laying out, putting down walks, and edging, and planting, but at the North, he can only think how he will do it when the frost leaves the ground. The injury which trees and shrubs may receive from heavy falls of snow was alluded to last month. Much of the mischief from frost is done in February, when the noontide sun is quite powerful and the temperature sinks low at night. All but the hardiest of the

Broad-leaved Evergreens, such as Rhododendrons, Kalmias, etc., need a partial protection from the sun, where they are much exposed. The pruning of

Shrubby may be done, but it should only be trusted to some judicious person who knows the nature of the plants he is at work upon. Beware of those jobbing gardeners who go about doing pruning and similar work. They hack away indiscriminately and judge of the thoroughness of their work by the heap of brush they make. Some shrubs have their flower buds already formed, while others produce their bloom upon the new growth of wood, and it is evident that the treatment which would throw the last named into flower, would entirely spoil the other for the season. In pruning avoid all attempt at formality. Remove needless suckers and over crowded growth. Lilacs, Forsythia, Laburnums, Japan Quince, Flowering Almond and Plum, Viburnums, etc., only require judicious thinning. Rhododendrons and Azaleas have large blossom buds, and to remove these now would cause the loss of flowers. If such bushes need to be brought into shape, it is better to wait until they have flowered.

Honeysuckles and similar climbers will do all the better if the excess of wood be thinned out, leaving only enough to cover the trellis. The Hibiscus or

Rose of Sharon, commonly but incorrectly called *Althea*, where allowed to have its own way, makes a straggling weak bush that flowers but poorly. It needs the severest kind of pruning, cutting back, so as to leave only about three inches of the growth of last year. Where annuals are wanted early, and for the half-hardy ones, a hot-bed will be needed, but it is too soon to start it yet, though the preparations suggested under Kitchen Garden may be made. Read about starting seeds in boxes on page 62.

Dahlias and other roots stored in the cellar need to be looked to occasionally. If they shrivel somewhat from dryness, no harm is done, but if there is

any indication of mould or rot, they must be removed to a dryer place to prevent deterioration.

Trellises and all supports for plants may be made and neatly painted of some inconspicuous color.

Green and Hot-Houses.

No matter how variable the temperature is without, the fires should be so managed that the interior of the house is but little influenced. Water should be applied according to the wants of the plants, instead of giving an indiscriminate soaking alike to those at rest, and those that are making a rapid growth, as is often done. With

Insects, as with other evils, success in overcoming them depends in a great measure on beginning in time. When a plant is found to have an insect upon it, then is the time to treat it. Much trouble may be crushed between the thumb and finger.

Camellias that have done flowering, may be pruned into shape; shorten straggling branches to a good bud. A well shaped plant is too seldom seen, owing to crowding. Bring forward pots of

Bulbs, and supply them with abundance of water.

Seeds of tender annuals may be sown for early blooming, and a stock of all the needed kinds of Bedding Plants be propagated from cuttings.

Apiary in February.

If the weather continues wintry, follow the directions given last month, especially not forgetting to screen the hives from the influence of the sun after snows, when the weather comes off mild and warm. Warm weather such as will thaw the ice in the hive (caused by the freezing of the breath of the bees) will tempt the bees to fly, and they get little harm provided there is not soft snow for them to fall into and become entangled in. When the frost in the hive melts, an opportunity is afforded to clear out dead bees, etc. Examine hives, whether housed or not, for mice depredations, and take measures to abate them. This is a good time to shift hives to new stands, if desirable.

First-Rate Premiums.

OPEN TO ALL.

With the exception of five articles, which have been largely called for, and of which a new stock is not readily available, we continue the offer of our last month's premium articles. (For full particulars see page 2d of January *Agriculturist*, and especially a full **Descriptive Sheet**, which will be freely sent to all applicants.)

Most of the premiums offered in the table below, and probably all, will be open for two or three months yet, at least, so that every one will have ample time to fill up lists of names in progress, or make up entirely new premium clubs of subscribers. The offers are for subscribers for this full volume, whenever received. We have stereotype plates from which to supply the numbers complete from January 1st, to all new subscribers.

Many have received from one to four large premiums, and are getting new clubs, to secure still other articles. We are constantly receiving premium clubs from persons who say they found it quite easy to get up a club when they took hold of the matter in earnest. Many have obtained \$25 to \$112 articles by three or four days' work, and some in only a few evenings. It is only necessary to show a copy of the paper, and explain its leading features, its large amount of condensed information, its fine and valuable engravings, etc., to convince almost any man that it will pay him to take the paper a year.

We have no special or traveling agents, but any one disposed to do so, can act as voluntary agent, and receive the premium as an acknowledgment of his efforts,

and if it be an article he does not want, he can usually sell it for nearly or quite the regular price, and thus receive a good compensation.

Men and Women of various occupations, Farmers, Gardeners, Post-masters, Merchants, Mechanics, Clergymen, Teachers, Soldiers, Boys, Girls, etc., can engage in the work, and secure good pay for it, in the premium articles, which are all good and desirable.

Table of Premiums and Terms, For Volume 25. Open to all—No Competition.

Names of Premium Articles.				Price of Articles.	Number of Articles at \$1.00 each.	Number of Articles at \$1.00 each.
1—Goon Books—See terms below*						
2—Garden Seeds for a Family (40 kinds).....	\$5.00			14	35	
3—Flower Seeds for a Family (100 kinds).....	\$5.00			14	35	
4—Nursery Stock (any kinds desired).....	\$30.00			30	100	
5—Jona Grape Vines (12 of No. 1).....	\$15.00			27	92	
6—Concord Grape Vines (100 of No. 1).....	\$12.00			15	65	
7—Japan Lilies (12 Bulbs).....	\$6.00			13	38	
8—Downing's Landscape Gardening.....	\$6.50			15	40	
9—American Cyclopedha.....	\$80.00			96	338	
10—Wooster's Great Illustr'd Dictionary.....	\$12.00			19	65	
11—Any back Volume <i>Agriculturist</i>	\$1.75			30	100	
12—Any Two back Volumes.....	\$3.50			36	120	
13—Any Three do do do.....	\$5.25			42	140	
14—Any Four do do do.....	\$7.00			50	170	
15—Any Five do do do.....	\$8.75			58	200	
16—Any Six do do do.....	\$10.50			66	230	
17—Any Seven do do do.....	\$12.25			74	260	
18—Any Eight do do do.....	\$14.00			82	290	
19—Any Nine do do do.....	\$15.75			90	320	
20—Any Ten do do do.....	\$17.50			98	350	
21—Vols. XVI to XXIV do.....	\$15.00			19	72	
22—The County Election, Steel Plate Col'd.....	\$10.00			18	60	
23—Halt in the Woods do do.....	\$10.00			18	60	
24—Morton's best No. 5 Gold Pen, Silver Case.....	\$4.50			12	32	
25—Case of Drawing Instruments.....	\$8.00			16	45	
26—Best Family Clothes-Wringer.....	\$10.00			18	58	
27—Doy's Washing Machine.....	\$12.00			19	65	
28—Tea Set (Best Silver Plate).....	\$30.00			67	240	
29—Sewing Machine (Wheeler & Wilson).....	\$55.00			70	270	
30—Sewing Machine (Wilcox & Gibbs).....	\$55.00			70	270	
31—Sewing Machine (Elias Howe).....	\$60.00			75	290	
32—Melodeon (Best Four Octave).....	\$67.00			80	300	
33—Melodeon (Best Five Octave).....	\$112.00			140	450	
34—Piano, 7-Octave (Steinway & Sons).....	\$500.00			500	1500	
35—Barometer (Woodruff's Mercuial).....	\$12.00			19	72	
36—Barometer (Woodruff's Mercuial).....	\$18.00			22	95	
37—The Aquarius, or Water Thrower.....	\$11.00			19	65	
38—Buckeye Mowing Machine No. 2.....	\$125.00			150	450	
39—Allen's Patent Cylinder Plow.....	\$20.50			31	100	

No charge is made for packing or boxing any of the articles in this Premium List. The Premiums, 1, 2, 3, 7, 8, and 13 to 26, are DELIVERED to any part of the United States and Territories, free of all charges. The other articles cost the recipient only the freight after leaving the manufactory of each. Every article offered is new and of the very best manufacture.

In the above Table of Premiums, the First Column gives the Number of the Premium. The Second gives the lowest market price, or even less in some cases. The Third Column shows how many subscribers are required if sent at the regular price, \$1.50 a year. The Fourth Column gives the number of subscribers required, if they are sent at the lowest Club price for twenty or more copies, that is \$1 a year.

To avoid errors and save immense labor in looking over our books, it is absolutely essential that every name designated for a premium list be so marked WHEN sent in. (Such names are credited to the sender in a separate book, as fast as received—ready for instant reference.)

* **Premium 1.—Good Books.**—Any person sending 25 or more subscribers, may select Books from the List on this page, to the amount of 10 cents for each subscriber sent at \$1: or to the amount of 30 cents for each name sent at the (ten) club price of \$1.25 each; or to the amount of 60 cents for each name at \$1.50. This offer extends only to clubs of 25 or more names. The Books will be sent by mail or express, prepaid by us.—This is a good opportunity for the farmers of a neighborhood to unite their efforts and get up an Agricultural Library for general use.

The other Articles are fully set forth in the Descriptive List referred to below, and briefly last month.

These Winter Months afford a very favorable opportunity for collecting premium lists. Last year we sent more premiums in Feb'y and March than in Jan.

FULL PARTICULARS about each premium article, etc., are given in a "DESCRIPTIVE LIST," which we mail to any one desiring it. Send for it. The premiums are of a standard class, and enough of each can be obtained to supply all entitled to them. Each premium is for a specified number of names, as given in the Table, and any one knows just what he or she is working for, without regard to any higher number that others may obtain.

BOOKS FOR FARMERS and OTHERS.

[Any of the following books can be obtained at the Office of the *Agriculturist* at the prices named, or they will be forwarded by mail, post-paid, on receipt of the price. These prices are positively good only to March 1st.]

Allen's (L. F.) Rural Architecture.....	\$1.50
Allen's (L. L.) American Farm Book.....	1.50
Allen's Diseases of Domestic Animals.....	1.00
American Bird Fancier.....	.30
American Rose Culturist.....	.30
American Weeds and Useful Plants.....	1.75
Art of Saw Filing (Holly).....	.75
Barry's Fruit Garden.....	1.75
Bentley's Poultry's Companion.....	2.00
Bement's Rabbit Fancier.....	1.20
Blake's Farmer's Encyclopedia.....	1.50
Boussingault's Rural Economy.....	1.60
Bridgeman's Fruit Cultivator's Manual.....	.75
Bridgeman's Young Gardener's Assistant.....	2.00
Bridgeman's Kitchen Garden Instructor.....	.75
Bridgeman's Florist's Guide.....	.75
Brandt's Age of Horses (English and German).....	.50
Breck's Book of Flowers.....	1.50
Brown's Field Book of Manures.....	1.50
Bulst's Flower Garden Directory.....	1.50
Bulst's Family Kitchen Gardener.....	1.00
Bulst's Vegetables of America.....	5.00
Carpenters and Joiners' Hand Book (Holly).....	.75
Charlton's Grape-Grower's Guide.....	.75
Cobbett's American Gardener.....	.75
Cole's (S. W.) American Fruit Book.....	.75
Cole's Veterinarian.....	.75
Cornman's Agriculture.....	5.00
Copeland's Country Life.....	4.50
Cottage Bee-keeper.....	.75
Cotton Planter's Manual (Turner).....	1.50
Dadd's Modern Horse Doctor.....	1.50
Dadd's (Geo. H.) American Cattle Doctor.....	1.50
Dana's Muck Manual.....	1.25
Dog and Gun (Hooper's).....	1.50
Downing's Landscape Gardening (new Edition).....	2.50
Downing's Cottage Residences.....	3.00
Downing's Fruits and Fruit Trees of America.....	3.00
Downing's Rural Essays.....	5.00
Eastwood on Cranberry.....	.75
Elliot's Western Fruit Grower's Guide.....	1.50
Employment of Women—By Virginia Penny.....	1.50
Flax Culture.....	.50
French's Farm Drainage.....	1.50
Field's (Thomas W.) Pear Culture.....	1.25
Fish Culture.....	1.25
Flint (Charles L.) on Grasses.....	2.00
Fuller's Western Fruit Grower's Guide.....	2.00
Fuller's Grape Culturist.....	1.50
Fuller's Strawberry Culturist.....	1.50
Goodale's Principles of Breeding.....	1.25
Gray's Manual of Botany and Lessons in one Vol.....	4.00
Gray's How Plants Grow.....	1.25
Garrison on Milk Cows.....	.75
Hall's (Miss) American Cookery.....	1.25
Harshitz's Grape Culture, &c.....	5.00
Harris' Insects Injurious to Vegetation, plain.....	4.50
Harris' Insects Injurious to Vegetation, colored plates.....	5.00
Herbert's Hints to Horsekeepers.....	1.75
Hints to Hibernians, by Cleveland.....	1.50
Holbe's County Seals.....	4.50
Hop Culture.....	.50
How to Buy a Farm and Where to Find One.....	1.75
Insect Enemies of Fruit Trees, (Trimble).....	8.00
Jaques' Fruits and Fruit Trees.....	.60
Jennings on Cattle.....	2.00
Jennings on Swine and Poultry.....	2.00
Jennings on the Horse and his Diseases.....	2.00
Johnston's Agricultural Chemistry.....	1.75
Johnston's Elements of Agricultural Chemistry.....	1.25
Kemp's Landscape Gardening.....	2.00
Langstroth on the Honey Bee.....	2.00
Langstroth's (Downing's) Lady's Flower Garden.....	2.00
Leach's How to Build Hot-houses.....	1.50
Liebig's Familiar Letters on Chemistry.....	1.50
Liebig's Modern Agriculture.....	1.25
Liebig's Natural Laws of Husbandry.....	1.50
Linsley's (D. C.) Morgan Horses.....	1.50
Manual of Agriculture by G. Emerson and C. L. Flint.....	1.75
Maxwell's (Downing's) Lady's Flower Garden.....	1.50
Maxwell's Illustrated Horse Doctor.....	3.50
Maxwell's Illustrated Horse Management.....	2.50
McMahon's American Gardener.....	.75
Miles on the Horse's foot.....	.75
Morrell's American Shepherd.....	1.75
My Farm of Edgewood.....	1.75
Norton's Scientific Agriculture.....	.75
Onion Culture.....	.25
Our Farm of Four Acres (bound) &c..... (paper).....	.50
Pardee on Strawberry Culture.....	.75
Parsons on the Rose.....	1.50
Phantom Bouquet, or Skeleton Leaves.....	2.00
Pedder's Land Measurer.....	2.00
Quincy's Mysteries of Bee-keeping.....	1.75
Rabbit Fancier.....	.50
Randall's Sheep Husbandry.....	1.50
Randall's Fine Wool Sheep Husbandry.....	1.00
Rand's Flowers for Parlor and Garden.....	3.00
Richardson on the Dog.....	.80
Rural Affairs, (bound)..... 4 Vols. each.....	1.50
Rural Annual (by Joseph Harris).....	.50
Rural Register (by J. J. Thomas).....	.50
Saunders' Domestic Poultry..... paper, 30 cts. bound.....	.60
Saxton's Farmers' Library, set of 8 Vols. morocco.....	9.50
Saxton's Farmers' Library, set of 3 Vols. cloth.....	8.50
Schenck's Gardener's Text Book.....	1.50
Shelton's own Book.....	2.25
Skiffish Housewife.....	.75
Smith's Landscape Gardening.....	1.50
Spencer's Education of Children.....	1.20
Stewart's (John) Stable Book.....	1.50
Templeton's Menagerie's Pocket Companion.....	1.50
Ten Acres Enough.....	1.50
Tenny's Natural History and Zoology.....	3.00
Thaer's (A. D.) Principles of Agriculture.....	3.50
The Great West, bound.....	1.00
Thompson's Food of Animals.....	1.00
Tobacco Culture.....	.25
Todd's (S. E.) Young Farmer's Manual.....	1.50
Tucker's Register Rural Affairs.....	.30
Vaux's Villas and Cottages.....	3.00
Villas and Farm Cottages, (Cleveland and Backus).....	8.00
Warder's Hedges and Evergreens.....	1.50
Watson's American Home Garden.....	2.00
Wax Flowers (Art Making).....	2.00
Wet Days at Edgewood.....	.75
Wetherill on the Manufacture of Vinegar.....	1.50
Wheat Plant (John Klippart's).....	1.50
Woodward's Country Homes.....	1.50
Woodward's Graperies.....	1.50
Yonatt and Stedman on the Horse.....	1.50
Yonatt and Stedman on Cattle.....	1.50
Yonatt on the Hog.....	1.00
Yonatt on Sheep.....	1.00
Yonmans' Household Science.....	2.00
Yonmans' New Chemistry.....	2.00

Commercial Matters—Market Prices.

The following condensed, comprehensive tables, carefully prepared specially for the *American Agriculturist*, show at a glance the transactions for a month, ending January 18, 1866, and the year ending December 31, 1865, with other interesting comparative figures.

1. TRANSACTIONS AT THE NEW-YORK MARKETS.

RECEIPTS. Flour, Wheat, Corn, Rye, Barley, Oats.
25 days this month, 123,000 31,500 139,000 11,300 10,500 61,000
27 days last month, 553,000 2,216,000 1,979,000 310,000 376,000 963,000

SALES. Flour, Wheat, Corn, Rye, Barley, Oats.
25 days this month, 218,000 473,000 952,000 65,000 46,500
27 days last month, 275,000 1,393,000 2,185,000 111,000 454,000

2. Comparison with same period at this time last year.

RECEIPTS. Flour, Wheat, Corn, Rye, Barley, Oats.
25 days 1866, 123,000 31,500 139,000 11,300 10,500 61,000
25 days 1865, 331,000 11,000 137,000 10,500 21,000 178,000

SALES. Flour, Wheat, Corn, Rye, Barley, Oats.
25 days 1866, 218,000 473,000 952,000 65,000 46,500
25 days 1865, 267,000 461,000 831,000 33,500 141,000

3. Exports from New-York, January 1 to Jan. 18.

Flour, Wheat, Corn, Rye, Oats.
1865 55,237 50,281 63,350 13,419 2,661
1864 47,712 43,334 74,530 1,825 141

4. Receipts of Breadstuffs in New-York in each of the last three years:

Flour, Wheat, Corn, Rye, Barley, Oats.
1865 3,028,529 8,768,939 15,935,277 809,673 3,230,051 9,831,957
1864 3,967,717 13,433,135 21,618,851 491,915 2,541,801 12,962,338
1863 4,574,059 19,937,856 11,231,599 439,367 2,143,485 11,076,035

5. Exports from New-York during each of 7 years past:

Flour, Wheat, Corn, Rye, Barley, Oats.
1865 1,402,111 2,577,626 4,519,610 198,348 94,567
1864 1,918,592 12,193,433 816,531 588 150 42,135
1863 2,327,338 15,434,889 7,533,481 413,369 32,429 128,556
1862 2,091,518 25,755,755 12,029,848 1,041,540 4,067 210,699
1861 3,110,346 28,898,314 12,889,850 1,000,405 3,927 160,825
1860 1,636,302 13,538,039 4,083,082 450 818 103,076
1859 1,038,516 29,758 497,889 6,550 2,568

6. Comparative Stock of Flour in New-York, Jan. 1:

1861. 1865. 1866.
Western and State Flour, bbls. 537,057 465,835 703,232
Canadian Flour, bbls. 15,109 4,950 22,810
Southern Flour, bbls. 33,110 37,463 26,250
Grand total, bbls. 605,276 508,248 734,592

7. Comparative Stock of Grain in New-York, Jan. 1:

1863. 1864. 1865. 1866.
Wheat, bush. 4,334,817 5,540,441 1,897,356 2,940,108
Corn, bush. 1,511,620 1,414,114 4,501,704
Rye, bush. 33,370 212,238 518,118
Barley, bush. 90,144 584,700 304,161 1,099,837
Oats, bush. 531,312 3,111,836 3,918,301 2,246,852

8. Receipts of Breadstuffs at Albany, by the New York Canals in each of the last six years:

Flour, Wheat, Corn, Rye, Barley, Oats.
1860 1,149,100 11,776,000 14,155,509 322,100 2,867,600 6,390,900
1861 1,403,238 39,898,687 23,342,341 832,792 2,235,850 5,978,338
1862 1,829,619 25,967,836 23,802,881 718,897 2,562,639 5,990,058
1863 1,460,800 22,506,900 10,603,690 470,300 3,100,500 12,438,500
1864 1,183,200 15,465,600 10,332,400 630,390 2,405,900 12,177,500
1865 1,014,000 10,579,200 18,639,000 1,351,900 4,551,600 10,447,500

CURRENT WHOLESALE PRICES.

	Dec. 20.	Jan. 18.
Flour—Super to Extra State	\$7.00 @ 8.50	\$6.90 @ 8.40
Super to Extra Southern	8.75 @ 10.00	8.90 @ 10.25
Extra Western	8.10 @ 10.25	7.75 @ 10.00
Extra Genesee	8.50 @ 11.50	8.45 @ 11.25
Superfine Western	7.00 @ 7.50	6.90 @ 7.40
RYE FLOUR	5.75 @ 6.50	5.90 @ 6.00
CORN MEAL	3.15 @ 4.30	4.25 @ 4.75
WHEAT—All kinds of White	2.35 @ 2.75	2.25 @ 2.75
All kinds of Red and Amber	1.60 @ 2.37½	1.62 @ 2.55
CORN—Yellow	90 @ 1.00	86 @ 95
Mixed	88 @ 97	83 @ 89½
OATS—Western	50 @ 62	58 @ 60
State	62 @ 69	60 @ 61
RYE	55 @ 1.15	83 @ 1.10
BARLEY	90 @ 1.15	85 @ 1.15
HAY—Bale 150 lb.	90 @ 1.00	85 @ 1.00
Loose	85 @ 1.10	85 @ 1.10
Straw, 100 lb.	65 @ 1.15	65 @ 1.15
CORTON—Middle	18 @ 50	52 @ 53
HOPS—Crop of 1865, 10 lb.	25 @ 60	25 @ 65
FEATHERS—Live Geese, 10 lb.	80 @ 90	80 @ 90
SEED—Clover, 10 lb.	12 @ 13½	12 @ 13
Timothy, 10 lb.	3.70 @ 4.00	3.75 @ 4.25
Flax, 10 lb.	2.90 @ 3.03	2.70 @ 3.00
STEAR—Brazil, 10 lb.	10½ @ 13½	11¼ @ 15
MOLASSES, Cuba, 10 lb.	45 @ 65	35 @ 55
COFFEE—Rio, (Gold price) 10 lb.	17½ @ 20½	17½ @ 20½
TORRADO, Kentucky, 10 lb.	6 @ 30	6 @ 30
Seed Leaf, 10 lb.	5 @ 40	5 @ 40
WOOL—Domestic, 1 lb.	50 @ 75	50 @ 80
Domestic, 1 lb.	50 @ 75	50 @ 80
California, unwashed, 1 lb.	25 @ 45	20 @ 42½
TALLOW, 10 lb.	13½ @ 14	12½ @ 13½
OIL CAKE—100 lb.	52.00 @ 63.50	50.00 @ 64.00
PORK—Mess, 10 lb.	27.50 @ 28.00	30.00 @ 31.75
Prime, 10 lb.	22.00 @ 22.50	22.50 @ 23.00
BEEF—Plain mess, 10 lb.	11.00 @ 14.00	16.50 @ 20.00
LARD, in barrels, 10 lb.	15 @ 19	15 @ 18½
BUTTER—Western, 10 lb.	25 @ 38	20 @ 33
State, 10 lb.	33 @ 45	25 @ 40
CHEESE	14 @ 19	12 @ 18
BEANS—10 lb.	2.00 @ 3.00	2.00 @ 2.50
PEAS—Canada, 10 lb.	1.25 @ 1.35	1.25 @ 1.30
EGGS—Fresh, 10 lb.	37 @ 40	38 @ 40
POULTRY—Fowls, 10 lb.	14 @ 16	18 @ 20
Turkeys, 10 lb.	14 @ 16	18 @ 20
POTATOES—Mercers, 10 lb.	2.50 @ 3.00	2.55 @ 3.00
Peach Blows, 10 lb.	2.00 @ 2.50	2.25 @ 2.62
Buckeyes—New, 10 lb.	1.50 @ 1.75	1.75 @ 2.00
APPLES—10 lb.	2.00 @ 4.00	2.00 @ 5.00

The foregoing tables have been carefully prepared, specially for the *American Agriculturist*, from official and other reliable sources, including the notes of our own reporter. They will be found highly interesting, as showing the course of trade and giving a general view of the condition of our breadstuff supplies. They will

also be valuable for reference in after years.... Gold has been as high as 145, and as low as 136½, since our last, closing (Jan. 17) 140½.... Receipts of produce, during the past month, have been extremely light, especially in the breadstuff line, yet receivers have been eager sellers, in view of the decline in gold. The demand, however, has been quite limited both for home use and for export; and prices have favored buyers decidedly. The available supplies of flour grain in this market on the first instant proved much heavier than had been generally anticipated, and this circumstance has had a depressing influence on the market. Toward the close, with an upward tendency in gold, prices of the leading articles stiffened a little, but there was no important increase in the volume of business.... Provisions have been more active, owing to a revival of the speculative demand, and prices of hog products have improved, while other articles have been rather heavy, particularly Butter and Cheese, the available articles of which are heavy.... Cotton has been more freely offered and purchased, closing at rising prices.... Fine grades of Wool have been in better request and held more firmly. Other kinds have been dull and drooping.... Hay, Hops, and Tobacco have been in fair demand at uniform rates.

New York Live Stock Markets.—

BEEF CATTLE.—Average receipts for the past four weeks (ending January 17th), 4,834; weekly receipts for previous month, 5,843; weekly average for past year (1865), 5,260; weekly receipts for same period last year, 4,942. The beefs offered for sale have been of about the usual range of qualities. Latest selling prices average about as follows: Extra qualities, 17c@18c per lb. estimated dressed weight. Medium to good, 14c@16c. Poor grades, 9c@12c.... **MILK COWS.**—Average weekly supply, 122. Most of the cows offered for sale have been inferior milkers, and a large proportion of them from New York State. The best milkers have sold for \$100@ \$125 each; medium to fair, \$70@90; poor to ordinary, \$35@50.... **Veal Calves.**—Average weekly receipts for past four weeks, 375; for previous month, 712; weekly average for same period last year, 511; weekly average for the whole of the last year (1865), 1,333. The demand since our last report has been active, and prices for calves well fattened have ranged \$15@33 each, or 12c@ 15½c per lb. live weight.... **Sheep and Lambs.**—The market has been steady and the demand uniform. The sheep offered, with the exception of a few lots, have been of an ordinary and sometimes inferior quality of mutton. A few small lots of extras have sold at prices far above the average of good sheep. The average weekly receipts for the past month was 16,603; the weekly receipts for the previous month, 18,948; average weekly receipts for the past year, 16,938. The average price per head, \$7.71. Price per lb. live weight, 7c@9c.... **Live Hogs.**—The average weekly receipts for the past month, 18,038. Average per week for the previous month, 19,124. The second and third weeks were unusually dull and prices declined. The past week, sales have been more active and prices tending upward slowly. The price per lb. for Western corn-fed swine now stands 11c live weight; dressed, \$13¼.

State Senator, a practical cultivator, and a distinguished German writer. This department occupies a portion of the space used for advertisements in the English edition. The German edition is supplied on the same terms as the English, and may be clubbed with it. It ought to have a hundred thousand circulation. Our readers will confer a favor, both upon the Publishers, and upon many Germans as well, by making its publication and character more widely known. Many having German gardeners, farmers, or laborers, take both editions.

Morton's Premium Pens.—We have sent out a good many dozens of these, singly, as premiums, and if they give as much satisfaction as the one we constantly use, they are doing good service. One writes that "the pen is first rate, and the pencil very convenient" but it ought to have a magazine for pencil leads "—There is one in every case, with a good supply of leads, found by unscrewing the pen-holder, near the base of the pen.

"**Arthur Merton**" is the title of a most valuable book, published by J. C. Garigues & Co., Philadelphia. It details the trials, temptations, fall and reformation of a young man, in a manner calculated to impart instruction to every young person, as well as to all who have the care of youth—to parents, guardians, employers, and teachers of both week-day, and Sunday schools. 12mo., 288 pp. Price \$1.25. Sent post-paid by the publishers as above, or from this office.

Back Volumes of the Genesee

Farmer for 8 years past, are supplied at the *Agriculturist* office. Terms by mail, for bound volumes, \$1.25 each, unbound \$1 each volume. The volumes for 1864 and 1865 contain the first 24 numbers of the "Walks and Talks on the Farm," of which No. 26 is given on (pages 50-1). Each of the back volumes of the Farmer contains much useful information.

Some January Numbers Delayed.

—An increase over last year of about 20,000 subscribers received between Dec. 20, and Jan. 15, taxed our usual and extra office force to the utmost, exhausted the customary provision of paper and printed numbers, and rendered it utterly impossible to mail the January number to subscribers as fast as their names were received. Our mail clerks, paper manufacturers, and printers, by dint of hard day and night work, caught up with the mails Jan. 10, and we shall hereafter be able to send the January and succeeding numbers to subscribers within a short time after the reception of their names.

Good Advertisements occupy considerable

space in this number, and many of them are of peculiar value at this season, when every one is laying out his plans for spring. It will pay to look them all carefully through. See about their character, etc., on page 7, last month. We repeat the standing request, that those ordering of our advertisers, sending for circulars, etc., will write where the advertisements were seen.

This is a good Month for Premiums.

—A notice in another column (p. 44) announces that the Premiums will remain open for some time yet. Perhaps the present month is the best one in all the year to gather up a large list of subscribers and secure some one or more desirable articles free. Many have not yet renewed their subscription to any paper, and there is still a large multitude who have not even seen a copy of the *Agriculturist*. This month people are beginning to lay out their plans for the next season's work, and they will be the more ready to receive all the hints and suggestions they can from papers, and otherwise. Please let them have a look at the *Agriculturist*, and an invitation to take it regularly. Thousands of dollars' worth of premiums have been already sent out, and are giving universal satisfaction. There are plenty more.

A Seed Store in Every Town.

—The large number of seed advertisements in this paper, all of them from good, reliable parties, is a specially valuable feature, alone worth the subscription price. The cost of carrying seeds by Mail to the remotest corner of the most distant territory of our country, is only eight cents per pound, or 2 cents for each 4 ounces. This will enable our readers, with our advertising pages before them, to procure good seeds almost as conveniently, and perhaps more cheaply, than if an extensive seed store was located at every one's door.

Rural Annuals.—The Rural Register (30

cents), and the *Rural Annual* (25 cents), are valuable to every cultivator, and these annual volumes are worthy of being read and preserved for reference. The numbers of both these works for 1866 are now ready.



Containing a great variety of Items, including many good Hints and Suggestions which we throw into small type and condensed form, for want of space elsewhere.

Forty Pages Again!—Though the past size of this journal has been 32 pages, which is all we have promised, we are compelled to issue 40 pages, as we did last month. The extra advertising in part meets the extra expense for paper, etc., and thus we are able to add largely to the reading columns, for it will be noted that for every added page of advertisements, we add at least one extra page of reading matter.

Back Volumes of the Agriculturist

for 9 years are supplied neatly bound at \$2 each (or \$2.50 if to be sent by mail); and \$1.50 unbound (or \$1.75 if sent by mail). The German Edition for 7 years past, supplied on the same terms, bound or unbound. Any single number (for 9 years past) sent for 15 cents post-paid.

Please speak of the German Edition.

—It may not have been noticed by all, that we issue the *Agriculturist* in the German language also, and this has long been the only German paper of the kind in this country, though there are here several hundred thousand German cultivators. Our German Edition contains all the engravings and valuable articles of the English, besides an excellent special department, edited by Hon. FREDERICK MUENCH, of Femme Osage, Mo., who is a

Value of Corn Fodder.—The estimates of the feeding qualities of corn stalks vary more perhaps than almost any other article of fodder. These different estimations are based much more upon the ways it is used, than upon any just notions of its nutritious value. On the prairies and on a large portion of the West it is seldom gathered at all, but the cattle are left to browse it in the fields. On a great part of the South the leaves and tender tops are gathered, bound in bundles, and constitute the chief dry fodder in winter. In the Middle and Eastern States it is usually hauled in after the corn is harvested, and fed around the stacks, thrown upon grass ground or in the barn-yards. Some farmers take great pains to cure it well, house it well if possible, and feed it after chaffing it fine and soaking it twelve hours, or steaming it till well cooked, usually adding bran, corn or oil meal in moderate quantities. These estimate corn fodder as nearly or quite equal to good upland hay, for all kinds of neat cattle and sheep—but best for cows.

The most Prolific Cow on Record.

—We have not, so far as we remember, the personal acquaintance of Mr. Henry Neff, of West Burke, Huntingdon Co., Pa., who is responsible for the following very remarkable statement; but he is an old subscriber of the *Agriculturist*, and his letter carries with it such assurance of honesty, that he has our entire credence. He writes:

"A short time since I read in the N. Y. Times an account of a very prolific cow in England, having four calves at one time, which all died soon after. Porter Township, Huntingdon Co., Pa., can beat that 'all hollow.' When I was a boy, about thirty years since, my father had a cow that had eighteen (18) calves at seven (7) births. The first time she had one, the next time three, the next time four; three times succeeding this she had three each time, and the last time she had two. They all lived and grew up fine and large, with the exception of one, which was one of the four. When the cow was found in the field with the four calves, one was dead, although it was as large as the living ones, and seemed as perfect in every respect. I can give any amount of testimony to prove the correctness of the above, if any one thinks it incredible or wants more evidence."

Mashed Turnips for Stock.—Peter Gale, Westchester Co., N. Y., says: "I have a stone weighing 60 or 80 pounds, placed inside of half of a large molasses cask, set at one side and 6 inches from the top, putting one turnip on this stone at a time, with a mallet weighing 4 or 5 pounds, I mash a bushel in from three to five minutes." Would it not be better to place the stone over the half-hogshead tub and surround it (the stone) by a bottomless half of a flour barrel to catch splatterings?

Farming in Minnesota.—We do not wish to invite our readers to see who will tell the biggest (true) story about the profits of western farming, for we cannot publish the statements if they send them; but the following is given as a remarkable example of success in legitimate farming in very favorable seasons, and in a location where the rise in the value of land was very rapid. It is given on the authority of F. M. Crosby, of Dakota Co., Min.

"In the year 1863, J. W. Treager purchased thirteen hundred acres of unimproved land in Washington Co., Minnesota, for which he paid \$10,000. In the summer of 1863 he broke seventy-five acres, upon which he raised a crop in 1864. That crop was sold for sufficient to pay for the land upon which it was raised, for breaking and fencing it, and all the expense of raising, harvesting and marketing the crop, and \$1,100 besides.

"In the season of 1865 he cultivated 860 acres of the land and raised:

16,000 bushels of wheat, worth.....	\$16,000
7,000 " " oats, ".....	2,800
3,000 " " barley, ".....	2,100
2,000 " " potatoes, ".....	500
4,000 " " corn, ".....	2,600

Total value of crops raised in 1865.....\$24,000

The cost of seed, raising, harvesting and marketing the same was.....8,000

Leaving profit, after paying all expenses.....\$16,000

Add the profit received from the crop of 1864.....1,100

Makes the profit of the two crops.....\$17,100

It cost him to break and fence the land he has under cultivation (deducting the expenses of breaking and fencing the land cultivated in 1864), which was paid with the crop of that year.....2,200

To which add the cost of the land (deducting the cost of the 75 acres cultivated in 1864).....9,500

Deduct that sum from \$17,000, the total profit of 1864 and 1865 leaves.....\$5,400

After paying for the land and all expenses of breaking and fencing it, and the expense of seed and raising and marketing his crops.

"Mr. Treager has realized from two crops, the first being only seventy-five acres, after paying all expenses, sufficient to pay for 1200 acres of land, to pay the expense

of breaking and fencing 860 acres of it, and \$5400 in cash.

"The buildings upon his land cost him \$3000, and his farm is now worth \$25,000, making a total profit of \$37,400.—Farmers who have operated upon a smaller scale, have realized profit in proportion.

"This is a simple statement of facts. From it the world can judge whether farming in Minnesota is profitable."

Ice Houses and Filling.—Our plan for an ice-house described on page 350 (November) was not intended for the cheapest one that would keep ice well, but for a good one in which the theory of the best way to keep ice is well carried out, and which would keep ice well on any soil and in any climate or exposure. The fact is that some of the cheapest, most carelessly knocked together houses, if the ice is only well packed, keep it excellently, while some built at great expense, which lack good drainage or ventilation, or something else, keep it but two or three months. Ice houses ought to be filled, if possible, in very cold weather, after the interior of the house has become thoroughly cold, and when the ice itself is not only perfectly dry, but very cold. It retains this cold a long time, and besides, if the cakes are well cut and closely packed, with the interstices chinked full of ice dust or snow, a few pailfuls of water may be dashed on, which will immediately freeze and make the whole nearly a solid mass. Cakes thus frozen together, will nevertheless crack apart easily when the ice is needed in summer. The ice cakes should be cut with right angles, and of uniform sizes, so that the layers may fit the size of the house as nearly as possible, leaving about 6 inches all around, to be filled with straw or sawdust closely packed. It is usually best to lay a bed of tanbark or straw, some three inches thick upon a level floor of boards, such as was described in the November number, but if the floor be of rails or of boards laid unevenly upon the ground, the bed should be 6 or 8 inches thick. The floor should never be of matched boards, for it must allow water to pass through freely. In large ice houses the practice of setting the cakes of ice on the edges, is frequently advocated. We see no reason to prefer it in small houses, for if the ice be carefully packed, all the thawing will take place at the exterior of the mass. When filled, the ice should be covered with a thick layer of straw.

Making a Solid Mass of Ice.—Where a supply of water can be had, with a little fall, and where there is sufficient cold weather, an ice house can be readily filled with a solid mass of ice at trifling expense. Arrange a pipe so that the water can be thrown out over the floor of the ice house in the form of fine spray, as from the rose or a watering pot. This will freeze as it falls, quite rapidly in cold weather, and in a brief time a whole house can be thus filled with a solid mass.

Mules and Horse Teams.

—"Bob." There are a good many good things about mule teams, but you can't trust them. With steady work, if not abused, and with enough to eat they will do more work than most horses. No teams we ever saw will do more work than those little Kanuck stallions, which twenty years ago were much more common than they are now. They would weigh about 800 to 1000 pounds apiece when fat, were as spry as cats, tough as knots, afraid of nothing, and reliable. As a general thing, too, they knew more than their drivers, about many things. All the horses we use for farm work are mares or geldings, and they are therefore more liable to disease, need more care, will not stand so hard work, have less pluck, are more apt to shy, etc. In all these particulars a horse is hurt by gelding—but it does a mule good. Mules will bear a certain kind of abuse better than horses. They are very knowing, and teachable if they must learn, not naturally docile like a good horse. They make good farm teams, but are better adapted to the climate of the Southern States than to ours.

Windmills.—In reply to several inquiries for windmill powers, we will state that such are now employed all over the country, for pumping water, churning, driving saws for cutting fire wood, and they may be made to run thrashing machines, or grain mills. Such a mill can be erected over or near a barn, to drive several kinds of machinery and any skillful mechanic can put one up. If the wings are not self-regulating, a brake can be applied to some journal to stop them, or to make them run slowly during a gale.

A Warm Poultry House for Maine.

—A would-be poultry fancier in Androscoggin Co. asks how he can build warm enough for Black Spanish Fowls. In December, 1864, we gave a plan of a poultry house, which was lathed and plastered, ceiling and all, and had conveniences for fire in very severe weather. This is an expensive plan, but good. The best thing for our Maine friend to do is, to dig out a pit 3 feet deep, about 8 feet

wide, and as long as he pleases; lay up a back-wall 8 feet high, and a front wall towards the east and south 5 feet high, with a 4x6 inch plate on each, laid in mortar or cement. Between the end-walls, 2½ feet from the back plate, lay a strip of scantling, supported in the middle, if necessary, by braces to the back wall; roof over between this and the back, and set 6-foot green-house sashes to cover at least two-thirds of the pit, to rest on the front wall, and this scantling—rafters being set corresponding to the width of the sashes. Make holes for ventilation in the back wall, set the roosts very low—not over 3 feet high, and all on one level—provide other conveniences and necessities as frequently directed. Make the door in one end, and the entrance boarded off from the fowls' quarters. Finally bank up the earth on the outside, making very thick earth walls, well sodded. Such a house will be warm both summer and winter. Thorough drainage is very necessary, and in winter it will probably be best to have thick straw mats, made to roll, to lay over the glass on very cold nights.

Cheap Stump Pullers.

—Reuben Seip, Steuben Co., N. Y., inquires for a cheap stump puller. He will find illustrations of three different stump pullers in the *Agriculturist* for 1865, one on p. 77, March; p. 114, April, and p. 371, December. For pulling sound stumps, a very strong machine is required, having a large screw to lift a stump vertically, or a system of pulleys with a long chain and iron roils attached to another stump, drawing over the top of a frame set near the stump to be lifted.

White Clover.—"Will Swedish White Clover give a large yield of good hay?" Not equal to red clover. It can be obtained at most seed stores.

Garden Notes.—Rev. W. K. Darcy, Middlesex Co., Mass., sends us what we consider a model letter, for it gives as well as asks information. The following bits of garden experience will interest many. Some of Mr. D.'s queries are answered in the present number, and others will be attended to in time.

"A few Garden Notes for 1865. The Cooks' Favorite Tomato has proved, with me, to be nothing better than the Early Apple, long grown. The Early York is, however, a decided improvement; being fully a week earlier than the Apple, smooth and good-flavored, and an abundant bearer. Of course, the Fejee still maintains its rank as a late Tomato.—Of Beans, the Fejee (from Gregory, of Marblehead) proves with me, to be not only the earliest, but decidedly the best of the bush sorts. It resembles the Cranberry Bean in tenderness and flavor; but is much earlier.—The Early Wakefield Cabbage has, this year, given great satisfaction, proving early, tender and of excellent flavor. It is nearly as early as Early York, but has none of its flabbiness or toughness. It also grows larger with me than the Winnigstadt."

Canliffowers.—"W. K. D." Canliffowers will sometimes run up to flower in dry weather. They must be kept growing when once started, by watering if need be. We have found both Early and Half-early Paris to do on sandy soil, but we used a good dressing of muck and ashes.

Onions.—J. M. Shaver, Westmoreland Co., Pa. The whole story of Onion culture is given in our pamphlet on that subject. Price by mail 20 cents. At the season for sowing we give directions in the Monthly Notes, but of course cannot go so fully into the matter.

Lime in the Orchard.—Levi Lebo, Danphin Co., Pa., wishes to plow his orchard for a crop and use lime, and says "most of our farmers here think lime destructive to fruit trees." Most of our farmers find lime a beneficial manure. If other crops on your land are benefitted by lime, there will be no danger of hurting the trees. In many parts of New England it is regarded almost as a specific for old orchards beginning to fail.

Mulching Trees.—One of our Westchester friends, when he plants a tree in spring, sows a circle of buckwheat all around it quite thickly. When the buckwheat is in blossom, he pulls it up and lays it around the tree for a mulch. In this way, whatever nourishment has been abstracted from the soil, is returned to it by the decay of the buckwheat.

Are Butternut Trees Injurious?

J. B. Howe, Worcester Co., Mass. Young fruit trees may be injured by butternut and other forest trees, if the roots of the latter are so near as to rob the fruit trees of nourishment or to unduly shade them.

Plant Humbugs.

—Letters and circulars are received which show that the vendors of wonderful plants are still abroad. Some chap is about in Ohio, selling plums which the Curculio will not touch, because they are on stocks of the wild plum, and "quinces as

delicious as peaches which may be eaten right from the tree." But he is nothing to Luther Sutton, who hails from Wisconsin. Luther has wheat with seven heads on one stalk. Likewise he has seed of the "Western Green Tea," which people must be very green to buy. Moreover, he has "paint seed." A wonderful seed it is too—with both paint and oil in the seed, and as brooms can be made from the tops of this wonderful plant, we don't see why not paint brushes too. Besides all this, the same chap will "doctor for fits, cold sores and consumption, one month on trial for the receipt of 15 cents down," which is cheap. The blasphemous wretch uses the name of the Almighty several times in his circular, and calls himself a "Minister of the Cross of Christ." Will not people learn that seeds, plants, trees and such things of real value, do not first find their way to the public through peddlers, nor through the agency of such circulars as we have described.

Grape Mildew, Remedy Proposed.

Mr. J. Macracken, Secretary of the Hocking Valley Horticultural Society, sends minutes of a meeting held at Lancaster, O., from which we extract the following: "Informal remarks were made by Mr. Fetter's in regard to mulching as a preventive of mildew in vineyards and protection to orchards. He had experienced the benefits by comparing results in portions of his vineyard's mulched and not mulched, and he was so well satisfied of the benefits, that he intended mulching his whole vineyard to the depth of eight or ten inches with bagasse (the ground cane of sorghum), thereby protecting the soil from the hot rays of the sun. Dr. Sanders always keeps surface soil wet, believing that rain on hot parched soil creates mildew." Mr. M. states, that while neighboring vineyards were ravaged by mildew, the mulched portion of Mr. Fetter's remained in fine condition. Please send the note on propagating the Delaware.

An Essay on Grape Culture.—We are indebted to Col. B. P. Johnson, Sec. N. Y. State Agl. Society, for a copy of an Essay on Grape Culture in Steuben Co., by Hon. Goldsmith Denniston. This Essay forms a part of the Transactions of the Society for 1855, and is also printed separately in a pamphlet form. Steuben Co., now ranks as one of the great grape regions of the country, and this account of the character of the land devoted to vineyards, and the methods of culture that have proved successful, is interesting and useful. It is fully illustrated by maps, etc. There are doubtless many other localities as well adapted to the growth of the grape, as are those near Crooked Lake, and this Essay will be a useful aid in forming an opinion of them.

The Catawba in Iowa.—Mr. A. Brodt, Lee Co., Iowa, sends us samples of Catawba wine, which shows that the grape ripens with him. The wine, though of a lighter character than that made further South, was exceedingly well made and a very creditable specimen.

Steuben County Grapes.—The neighborhood of Crooked Lake, in Steuben Co., seems to be especially favorable to the growth of the grape, and the brands of Hammondsport, Urbana, Pleasant Valley, and others, have already become well known in the New York Market. On the 12th of December, we saw ten tons of grapes from those places, at the Commission store of C. W. Idell, on West st. The fruit was Isabella and Catawba, in 5 and 10 pound boxes, and in excellent order. It met with a ready sale at 20 cents per pound wholesale.

Keeping Grape Cuttings.—Rev. W. K. Darecy. In a dry cellar in dry sand, the grape wood will be likely to become dry itself. In a cool cellar, they will do well if the sand be kept moist, but if it be both dry and warm, it is better to bury the cuttings out of doors below the reach of hard frosts. By putting some straw or litter over the place, the ground may be kept from freezing so that they can be easily taken out.

Iona and Israella Grapes.—W. S. Waters, Wilson Co., Tenn. We have nothing to add to the opinion given in October last. They are both worthy of trial in your State. I. Mattison, DeKalb Co., Ill. The Iona is not as hard to strike from cuttings as the Delaware. It is easily propagated from cuttings in the open ground, but the wood is just now too valuable to use in that way.

Apples in Wisconsin.—E. W. Daniels, Washara Co. says, that with him the King of Tompkins Co. proves one of the most tender varieties. From his own experience and that of his fruit growing neighbors, he gives the following as the hardiest. Duchess of Oldenburgh, Talman Sweet, Golden Russet, Perry Russet, St. Lawrence, Red Astrachan, Fameuse or Snow, Fall Orange. Sops of Wine and Westfield Seek no further.

Apple for a Name.—J. Osborn, Union Co., N. J. Apparently Victuals and Drink, a favorite variety in some parts of your State, where it is also called Big Sweet, and Pompey.

Crab Cider.—A correspondent wishes to know how the famous Crab Cider of Franklin Co., Pa., is made, and what kind of apples are used. Will some of our Franklin Co. readers respond?

Fruit Drawings.—"F. H. H.," White Marsh, Pa., sends some clever drawings, which he need not be ashamed to put his name to. The large apple is Peek's Pleasant. A fine fruit and good keeper. The other we do not recognize so readily. It may be Jefferis, a Chester Co. variety—but that is a guess only. The other fruit is that of *Celastrus scandens*. See engraving and description in August, 1864.

Forest Trees.—Many correspondents. It is our intention to give more attention to the culture of these than we have heretofore done. No progress can be made with their propagation at this season. If any seeds are on hand, do not let them dry up. Thin shelled seeds should be kept in sand, and those very difficult to start, such as Thorns and hard nuts, should be put into boxes of earth and exposed to the cold of winter. Arbor Vitæ seed may be kept in sand.

European Alder.—J. G. Eisentrاندt, Washington Co., Wis. The European Alder is sold at large nurseries, but at a price which would make it too costly to plant on river banks to keep them from washing. Our native Alders would answer as well, and probably the White Willow would be better than either.

Exterminating Locust Sprouts.—"E. K. T.," Orleans Co., N. Y., writes, "I would be thankful if some person could recommend, through the *Agriculturist*, an effectual way to remove or prevent young locusts growing up from the old roots." The only way is to cut off the sprouts when they are not more than a foot or two high. Young locust trees will give little or no trouble if they are mowed twice every season, close to the ground, when grass is cut for hay.

Late Strawberries.—B. F. Butterfield, Windham Co., Vt. The Georgia Mammoth is perhaps the best of the later varieties, and is a fair fruit, hard enough to bear transportation to market.

Flowering Shrubs.—Mr. H. Allen, Washington Co., N. Y. The shrub with double yellow flowers seen at Central Park was doubtless *Kerria Japonica* (often incorrectly called *Corchorus Japonica*), the Japan globe flower. It spreads greatly by means of suckers and often becomes troublesome. The Rose of Sharon, *Hibiscus Syriacus*, may be had at any of the nurseries.

Washing Seeds.—One of our readers called in to say that the easiest way to wash tomato, cucumber and other slimy seeds, is to tie them in a cloth and then wash them, cloth and all, in soap suds, then rinse and dry. He says that the mucilage is readily removed by this treatment. Make a note to try it next summer.

Poison Ivy.—Joseph Lux. That this plant poisons some persons and is harmless to others is a well known fact. We cannot tell why, any more than we can why cheese, honey, or any other usually harmless things are poisonous to some individuals. The queries propounded by you are without the scope of an agricultural journal, as they refer to obscure points in pathology.

The Practical Entomologist.—We have received two numbers of this sheet, and find it filled with interesting matter relating to insects, presented in a popular form. It may be had by sending 12 cents in stamps, to E. T. Cresson, 518 South 13th St., Philadelphia.

The Potato Trade.—New York enjoys a very large inland and coastwise commerce in potatoes, which has sprung up, or at least immensely increased within a few years. Formerly the seaboard towns of Connecticut, New Jersey, and Long Island were chiefly interested in this trade, and their crops were for the most part calculated for marketing in fall or winter. Now, however, the trade is controlled by dealers who purchase at the West, chiefly along the lines of emigrant travel. They make use in cold weather of the returning emigrant cars in which fires may be kept up if there is any danger from frost; and thus, in the coldest weather, and at an expense quite inconsiderable, compared with the advantage, the crop of the great West is brought to our markets. We learn that this system, which was at first put in operation, according to the *Detroit Free Press* in Southern Michigan, by a Mr. Shoecraft of St. Joseph Co.,

in 1857-8—is gradually extending—as it should. The use of warmed cars should not be confined to potatoes; eggs, apples, and other roots, especially carrots for cattle feed, might be profitably transported in this way. Another result is that eastern farmers who formerly raised winter potatoes now make their crops in mid-summer, or hold them over for spring prices. The former is the best practice, for the land is used for a crop of cabbages, or pickles after the potatoes come off, with great profit if in good condition and well enough tilled and attended.

A New Work on Bee-keeping.—Mr. Quinby, whose work on bee-keeping has long been a standard one, has entirely rewritten the volume, and given the results of an experience of many years. The work is well illustrated, and directions for all the practical operations in the apiary are given. The plates of this work have been ready for some time, and we have only been waiting until the printers should be relieved of the pressure of holiday work to print and issue it. It will be ready during the present month.

The European Timekeeper largely advertised to be sent on receipt of one dollar, in some cases 50 cents, is a form of sun dial on a card, costing the maker perhaps 5 cents, and of little or no practical value. An advertisement of it was offered to the *Agriculturist*, but declined because it was thought the purchasers would not receive the worth of their money.

Victor's Stories, FOR BOYS AND GIRLS, by the writer of "Uncle Paul's Stories," is an excellent book for children. There are 45 of these stories, told in a pleasant manner, and each inculcating some valuable lesson, without being "preachy" in style. The numerous engravings, its printing and binding, are all attractive. Published by the American Tract Society, Boston.

Adobes or Sunburnt Bricks.—N. J. Smith, Mitchell Co., Iowa. We have had some experience with houses built of these, in Northern Mexico. There the climate is perfectly dry for nine months in the year, and there is but very little frost. The houses are seldom more than one story in height, with very thick walls. When covered by a good roof and the outside is protected by a thick coat of plastering, they stand very well, but when, as is usually the case there, the roof is faulty and the walls unplastered, the bricks wash away badly in heavy rains, and they require pretty thorough repairs at the close of the rainy season. We know of no instances in which this material has been used in Northern climates. It strikes us that the great difficulty, in our uncertain climate, would be to get the bricks thoroughly dry. If they retained any considerable amount of moisture, the frost would cause them to crumble. We should be glad to hear from any who have tried this material.

Wire Clothes Line.—Charles Sylvester, of Mercer County, N. J., writes: "We have used a Wire Clothes Line for over five years. It has not been housed at all, and it is just as good as ever. It does not injure the clothes a bit. It is an old telegraph wire about $\frac{1}{4}$ inch in diameter and 'galvanized' (that is, coated with zinc). The wire was a present to us, so I do not know what it costs, but can assure you it will pay for everybody to get one." [We believe it.—Eds.]

Loosen a Nut Rusted Tight, by holding a hammer or something heavy against one side, then placing a cold chisel as you would to cut the nut through to the bolt; give a few light taps on the chisel, which will expand and loosen the nut and seldom injure it." So says "P. G." of Peekskill, N. Y.

Laurel Poisoning.—Another remedy is proposed by a Farmer of Wickford, R. I., which is salt pork forced down the throat of cattle and sheep that have been poisoned by Laurel. He says that he has tried it with success. Such an inert antidote would indicate that the poison must be very mild, or the medicine useless.

Seeds by Mail.—E. P. Horne, Denver, Colorado. Seeds and plants have a legal right to go wherever there are Post routes and Post Offices, at the same rates in the Territories as in the States. We frequently send and receive such things in this way from Washington, and other Territories.

Plant for Edgings.—D. Noble, Shawanaw Co., Wis. The plant is *Lycopodium complanatum*, and is noticed on page 22. Mr. N. recommends this for edgings, but we do not understand from his letter that he has so used it himself. With us it only grows well in the shade. If Mr. Noble has succeeded with it in cultivation, we will thank him for an account of its management.

Implement Trials, under the Direction of the N. Y. S. Agricultural Society.—

A real stride forward.—The Secretary of the N. Y. S. Agricultural Society has issued a schedule for a trial of mowers and reapers, to take place at some time and place during the coming summer, to be decided upon at the time of the annual meeting (14th of February). The circular, which we have received, gives evidence that the effort will be made to secure as full justice, and as complete a test of all the qualities of each machine as possible. We hope, however, it will not be settled upon as the absolute guide of the committees of judges, without essential modifications. Any one applying to Col. B. P. Johnson, Albany, will receive this circular. (Send postage.) Besides the mower and reaper trial, it is also proposed to try, at the same time, hay rakes, hay tedders, hay presses, threshing machines, fan mills, etc., hay cutters, arrangements for loading and unloading hay, binding grain, also horse powers, and portable engines.

It is intended, also, to hold early in the season a trial of *Plows*, together with harrows, cultivators, spaders, clod crushers, rollers, drills, horse hoes, etc., for which schedules will be submitted at the time of the annual meeting at Albany, at the date above given.

Drag-Saw Questions.—C. T. Logan, Fulton Co., Pa. The drag-saw teeth should be filed to cut in *dragging*, and not in *shoving*; for thus the saw is in no danger of bending, it clears better, and in sawing large logs cuts faster, and with less strain to the machinery. A 20-inch stroke is rather short for logs more than 2 feet in diameter; an adjustable crank-pin is often a convenience. You will find 130 pounds rather a light weight for your fly or driving wheel; 200 to 300 would probably be better.

The Cattle Plague.—The most recent accounts from Great Britain seem a little more favorable, yet the great distress and still greater danger is not abated. The shutting off of Canadian sheep and beeves from our markets by the recent law seems at present productive of no good, though it is a wise precaution to make perfectly sure that neither sheep nor neat stock should be allowed to enter this country which by any possibility might bring the seeds of the disease. A fine lot of long wool sheep, imported for breeding purposes, arrived in the harbor in the midst of the cold snap and were refused permission to land. Eight of them died from exposure, and the rest we presume have been reshipped. The government will doubtless make good the loss, for it is quite the same as taking private property for public use.

The Conn. State Ag'l. Society held its annual meeting at Hartford, on the 10th ultimo. The report of the corresponding Secretary is interesting and valuable for the review of the agricultural and stock prospects of the State; and the notice it takes of the Rinderpest, as it exists in Europe and England. The old officers were re-elected, viz.: E. H. Hyde, of Stafford, Pres't.; T. S. Gold, of W. Cornwall, Cor. Sec'y.; Burdett Loomis, Windsor Locks, Recording Sec'y. The N. E. Society is invited to hold its next fair in Connecticut.

The Department of Agriculture.—

The Commissioner of Agriculture, not having made much by threatening the Agricultural papers, has turned the batteries of his wrath towards his subordinates, whom he suspects of being in league with us, and of supplying us with facts in regard to the affairs of that blundersome concern. As usual, Isaac Newton is on the wrong track. Had we any communications from them, which we have not, we should not make use of them, knowing it would place them in an unpleasant relation to the head of the Department. We seldom see any of the gentlemen connected with the Department, and when we do, we have more pleasant subjects of conversation than Mr. Isaac Newton. More than all this, there is not the least need of going to any one in the Department for knowledge of its doings. There are several persons in Washington, outside of his subterranean dominions. If the Commissioner doesn't know that when he visits the other Departments, it is a signal for all the clerks to look out for fun, we will let him know it. We don't propose to let the Commissioner know how we learn about his official doings, but we have a plenty that are not in his report; suffice it to say, they do not come from any one over whom he has any control. For instance, when we wonder at the small results of the propagating garden, which being a government establishment with a most capable horticulturist in charge of it, we know that the fault is not the Superintendent's, but that gentleman does not inform us that his work is all for nought. Other people tell us, that every pear, grape, and other fruit as soon as it shows any signs of ripeness, is picked by the Commissioner or by his orders, and sent to some Senator or other public functionary, and the whole purposes of the garden, that of testing and comparing fruits, etc., is pervert-

ed. When we have a laugh over the hydraulic press blunder, we merely repeat what is told in the Washington circles as "Old Peanut's last." And when we say, that the Department is frittering away the valuable time of the entomologist on work of little use, while his valuable book on insects lies neglected, we only use our own eyes. This much in justice to the gentlemen above alluded to. Almost daily we see in some paper some expression of the contempt in which the head of the Department is held, of which, this from the Washington correspondence of a morning paper will serve as a specimen:

"Among the visitors recently at the White House was the Commissioner of Agriculture, who made a brave speech to the President, assuring him of his sanguine expectation for the early conglomeration of the States through the efforts of the Department of Agriculture:—"The people has laid down their spears and is beginning to take pruning hooks; and although the fields is wasted and the land mourns," quoth Isaac, placing one hand patronizingly on the President's shoulder, "yet we will distribute the seeds of harmony, the fruits of concord and garden sass generally, so as to let the South see the effects of good government and the wisdom of your administration." Upon concluding his remarks a copious dew was observed to be shed over the beaming countenance of Uncle Isaac; but the President preserved his usual equanimity and made no effort at reply. The employees of the department breathed easier upon the Commissioner's report of the effect of his address upon the President, and their appreciation of his abilities experienced no diminution."

The N. Y. State Cheese Makers' Association

met at Utica, on the 10th and 11th of Jan. The meeting was rendered particularly interesting by the addresses of the President, and of Mr. X. A. Willard, and by the reports of members of the association, who had been investigating the English cheese markets. The quality, size, and color of cheese adapted to foreign markets were discussed. The proposition to establish an American Dairyman's Journal, to be the organ of the society, received some encouragement and some dashes of cold water, and the matter is left pretty much with the secretary. The name of the society was changed, on account of its national character, to

"The American Cheese Manufacturers Association," and officers for the coming year were elected. Wm. H. Constock, of Utica, is President, with ten Vice Presidents from different States and the Canadas, and Geo. Williams, of Utica, Secretary.

The Wool Interest.—There was an important meeting of wool growers and woolen manufacturers held at Syracuse, in December last, which was convened on this wise. The U. S. Revenue Commission called upon the National Manufacturers' Association for information in regard to the action of the present tariff on the wool interests. This body invited the different wool growers' associations to send delegates to meet their executive committee to confer upon the matter. The wool growers it seems did not like this quiet "conference meeting," and so proposed to send as large a number of delegates as would attend from each society, and the manufacturers (in self-defence) called also for delegates from different parts of the country. Thus a very considerable body of substantial and influential men, representing the wool growing and the wool manufacturing interests, were assembled. The only result of the discussion, which is of immediate moment, appears to be that these gentlemen agree and urge upon the Revenue Commission that both these interests should have "equal encouragement and protection" on the part of the Government. Sundry matters relating to the intercourse between wool buyers and users, and wool growers and sellers were made the subjects of the discussion, it is to be hoped, to the mutual benefit of the two parties. This we hope will result in bringing wool growers and manufacturers into more immediate connection, establish fairer rates in the wool market, and fairer practices on both sides. The opportunity thus afforded by the meeting at Syracuse of delegates from so many of the States, was embraced to form a

National Wool Growers' Association.

—This society it seems was born entirely unexpectedly (to outsiders at least) when the wool growers were "caucusing" and planning their mode of procedure before going into convention with the manufacturers. Rather, we may say, as Minerva sprang full armed from the brain of Jove, it was brought into existence by the felicitous thought of the master spirit of the occasion. Of course it elected officers, (it could do no less). Hon. H. S. Randall, of Cortland Co., N. Y., is President; Wm. F. Green is Secretary; and Vice Presidents and an Executive Committee are elected. We hope prosperity and usefulness will attend the new Society, and that it will receive fully, as it has already to some extent, the

endorsement of the wool growers' associations.—Was it to prevent any similar precipitate action on the part of cheese makers and mongers, that the N. Y. Cheese Makers Society changed its name and style to the "American Cheese Manufacturers' Association?"

Spring Wheat—What is the Best Kind to Sow?

—We will publish the votes each kind gets, if we receive them before the 10th of February. Please mention post-office, county and state, and if business letters are written, put the ballot on a separate slip of paper, with or without reasons of preference.

Sheep Labels.

—We are much pleased with Dana's sheep labels, which are advertised in this number. The danger of tearing out is very slight, and they are easily inserted. The position of labels in the ears, together with the lettering and numbers may be made to convey much information about a sheep or lamb. If the rams are lettered instead of numbered, the letter of the ram on any label will indicate the sire, while the dam's number and her sire, may be indicated by a label in the other ear. Every sheep breeder should have some systematic way of labeling his sheep, in addition to very accurate flock records, with full memoranda.

The "Wine Plant" Again.

—The accession of many new subscribers brings us numerous inquiries about the so-called wine plant, which we will endeavor to dispose of briefly. Common garden Rhubarb is sold at a very high price under the name of English and Myatt's wine plant, Linnaeus Plant, Turkish Rhubarb, etc., for the purpose of wine making. The vendors have circulars giving directions for making the so-called wine, stating the number of gallons yielded per acre, and showing how much profit can be made at so much per gallon. Our position in regard to the matter is this: Wine cannot be made from the plant, but a sort of poor liquor can, and that it is a fraud to sell a common and well known plant under a false name. If people wish to grow rhubarb for any purpose, let them do it, knowing that it is rhubarb. One concern in Ohio sends us a sample of their product and intimates, that they shall not get up a club for the paper until they hear a report on their "wine." Our report necessarily is, that it is about as vile a liquid as ever disgraced the name of wine, and if, as is stated, there is a ready sale for it at \$3.50 per gallon, it only shows that some people have very queer tastes.

"Horse Doctoring" Book.

—A man in Maine advertises a book to "cure all the diseases that the horse is heir to." It is by one who calls himself the "Old English Mysterious Horse Farrier" (who ever heard of a cow Farrier), and "The Distinguished Veterinary Surgeon, Dr. Tidball," who gives the "experience of a life-time in the treatment of diseases of horses." This is all in 16 small pages, and consists of rank quackery and unreliable knavish jockeyism. It is a fraud upon the community to publish such a book. Besides the language and punctuation are so poor, one can hardly understand it.

Humbugs—Information Wanted.

Few days in the year pass, without our hearing from some part of the country about persons losing money sent to this City in reply to somebody's plausible advertisements or private circulars. We have, in the aggregate, traveled scores of miles in trying to find these parties out of their difficulties. We have "shut up" many a swindling concern by aid of the police, and have uttered hundreds of warnings on the subject. If everybody had read this journal for a year or two, the business would be at an end. But this being far from the case, we must keep on with the warnings.—Here is a letter from a town in Missouri, from a man who must know something about the paper, or he would not have written us, though there is no subscriber on our books at his post-office. He says, he and many of his neighbors had been induced to send their money to Hayward & Co., 229 Broadway, and get no return. The last November's *Agriculturist* would have saved them their money, had they read it. We see by the *Tribune* that a clergyman of Vermont sent \$56 to the same party, who acknowledged receiving the letter, but claimed that the money had been abstracted from it. By such subterfuges, and other means, these various swindlers manage to evade the law, and the police are unable to convict them for want of direct, positive evidence. We have thought of another plan: If we could get from 15 or 20 persons a statement that they had each been defrauded by any one of these rascals, it would probably be considered as sufficient evidence to convict him. We therefore ask, in behalf of the public, that every one who has sent money to any New-York concern, and received no proper return, will send us immediately a full account of it, in as few words as possible, but giving names, dates, etc., fully. We don't want these for publication, but to use as privately as may be, to further the ends of justice. Let no one hesitate

to send on the particulars of his own experience, and that of others which may be reliable. Attested affidavits would be desirable also. Our request includes all classes of swindlers—jewelry dealers, gift enterprises, lotteries, book or map publishers, inkless pens, gift parcels, commission merchants, etc., etc. We have now a Mayor and police officers who will lend a willing hand to a determined effort to stop or curtail the humbug operators, or drive them elsewhere at least.—A SUGGESTION: If every one sending money would send a bank draft, or P. O. order, payable to the order of the party remitted to, the reception and endorsement of the draft would furnish evidence, sufficient to convict any swindler.

Southern Agricultural Journals.

—As an indication of returning prosperity to the Southern States, we are glad to note the appearance of Southern agricultural papers. The Southern Cultivator, published at Athens, Ga., has already been referred to, and we now have the first number of the Farmer, published by Elliot & Shields, Richmond, Va. It is in the magazine form, containing 43 pages besides advertisements, and gives evidence of ability in its management. The Southern Ruralist, a weekly, is edited and published by H. A. Swasey, M. D., at Amite City, La. Its first number is mainly devoted to Southern horticulture. We wish all these enterprises much success.

Catalogues, etc., Received.

—Transactions Illinois State Horticultural Society for 1864.... Illustrated Catalogue and Floral Guide, from James Vick, Rochester, N. Y., a very clever specimen of catalogue making.... Premiums awarded at the Oregon State Fair, 1865; a neat pamphlet containing besides the premiums, several addresses and essays, and all showing a most creditable state of agricultural prosperity in our far-off sister State.... Addresses before the Pennsylvania State Agricultural Society, at its exhibition in 1865, by Hon. Edgar Cowan & Wm. H. Allen, L. L. D.... A fine engraving of the Israella Grape, natural size, Doct. C. W. Grant.... Transactions Indiana State Horticultural Society, January 1866.... Journal of the Cincinnati Horticultural Society, September and October, 1865.... Descriptive Catalogue of Fruit Trees, etc., Barnes & Kelly, Coal Creek (Kansas) Nursery.

Plants Named.

—A. J. Nash, Fairfield Co., Conn. The little evergreen is *Lycopodium lucidulum*, one of the Club-mosses, one species of which was described in January.... G. Hurd, Erie Co., Pa. *Dodecatheon Meadia*, American Cowslip or Shooting Star. You are right in valuing it as a garden plant; it is more common at the West.... "Subscriber," Forest Hill. The leaf is apparently that of some *Cassia*; the grass is *Muhlenbergia Mexicana*, Mexican Drop-seed. We never knew it to be troublesome in cultivated grounds. Its strong sealy root-stock indicates that it would be difficult to eradicate. It would probably yield to the treatment advised for Couch grass in November last.

Things we Cannot do.

—We cannot undertake to answer questions about plants or insects which are merely described by our correspondents. They should send good specimens. Nor can we readily determine plants from the leaves only.

Guesses at Plants.

—We have several times requested our friends, who send specimens, to take a little pains with them and give us some material from which to determine the plants. The best we can do with poor specimens and single leaves is, to guess, and it is often the case that not enough is sent to even guess at.—"Subscriber," Philadelphia. Your vine may be *Cynanchum nigrum*, one of the *Asclepias* or Milk Weed Family. Send the flowers next summer.... A. V. D. B. The leaf looks like what was sent out as Variegated Balm. Never saw the flower and therefore cannot give the botanical name.... T. F. Brady, Minn. We cannot guess what the plants inquired about are.... D. Blair, Huntingdon, Pa. The grass referred to as restraining the blowing sands is probably Sea-Sand-Reed, *Calamagrostis arenaria*, common on our coasts and on the shores of the great lakes. We do not know of the seed being for sale.... Sarah M., North Haven, Conn. Probably the leaf of the Balsam Apple, *Momordica Balsamina*, sometimes cultivated in gardens.

Sending Plants by Mail.

—M. T. Gregory, St. Croix Co., Wis., asks us to call the attention of nurserymen to the importance of better packing the plants they send by mail, and gives several instances in which he received only dried leaves and sticks in return for his money. It is a difficult matter to fix upon the best plan for all plants. In warm weather the plants will heat if kept close, and dry out if exposed. The use of wooden boxes for strawberry plants, when only a few were sent

in each, was quite satisfactory. We recently had some plants from Washington Territory come in good order by mail. They were in a tin box, which had holes punched in the cover, and were packed in plenty of moss. Probably there would be less complaint, if dealers put fewer plants in a parcel and used more moss.

Death of an Agricultural Editor.

Prof. James J. Mapes, the founder and until quite recently editor of the Working Farmer, died in this city January 10th, at the age of 60 years.

Report of the Department of Agriculture.

—Several inquire how they can get the report. Write to the Commissioner, or to your Representative in Congress, and ask for it.

His "System."

—A contemporary or temporary sheet, has a powerful leader, written to show the superiority of his paper over others. It opens thus: "Our system of making a good practical and reliable agricultural and horticultural paper, is not as some editors do, to refuse to publish anything, unless it comes to them original!" That is almost as good as the Portuguese sailor's grammar, when a piratical craft was approaching his ship, he asked: "What do her want of we, us want nothing of she."

Anonymous Communications.

—Letters giving information of any kind, and especially those criticising articles which we have published, or intended to throw doubt on statements which we have made, ought always to be signed with the true name of the writer. We may wish to write to him and ascertain the facts accurately, for we are always ready to change our views if we are wrong—and to say so if it will do any good. We are virtually debarred from investigation if our correspondents only sign "H. T.", "A. H. S.", or similar initials, or *nommes de plume*.

Invert the Picture.

—All must have noticed and admired the beautiful engravings given last month. The one on page 20 presents a new phase (not intended), on looking at it up-side down. Thus seen, the turkeys appear like soldiers (Turcos,) in line of battle, with the shells bursting in their front.

Fine Sausages.

—A box of sausages, received from Canaan, Columbia Co., N. Y., in season for New Year's day, were as good as the best "country home-made," we have ever eaten—the meat just lean enough—not mixed with lumps of fat—cut fine and very uniformly—well, but not over-seasoned. We would like to publish the directions, though we suppose they will hardly be furnished by the maker, Geo. E. Lovejoy, as we understand he makes a speciality of providing such sausages for the market.

Shaver's Pencil Sharpener

is convenient for artists and others, who use pencils with movable leads, also for sharpening slate pencils.

Ives' Kerosene Lamps,

of two or three forms, we have found very convenient. In the hanging pattern the lamp is readily drawn down from the chimney, for lighting or trimming, and in the table and wall lamps the chimney turns down upon the side.

Defective Letters of one Day.

—In over a hundred thousand letters received at this office annually, it is not surprising that there should be some errors on the part of the writers, yet it would save us much annoyance, and some unjust discredit, if people would be more careful. Here is one day's record of defects in 583 letters, viz.: 2 letters with money but no signatures; 2 letters with no place of date; 2 with State not given; 1 with no State, and no legible post-mark on the outside; 1 with no post-office; 1 with the County but no P. O.; 1 with the "given" name only, but no surname; 1 with several bills and currency notes all counterfeit; 2 with the letters unsealed but the money safe (a temptation to post-masters); 1 with money said to be inclosed, but left out by mistake, as the envelope had evidently not been opened since first sealed. This is an unusual record (1 letter in 42 defective), but almost every day brings one or more such, and the Publishers are blamed for not responding, when they have no clue to the address of the writer. How many letters miscarry from similar errors in the superscription, the clerks in the Dead Letter Office can best explain.

Do Sign Your Name.

—We never publish a name when requested not to do so, nor when the writer indicates by initials, or otherwise, the signature he prefers to have published; but we often wish to communicate with the writer, and sometimes have articles we

should use, had we the means of identifying the author. A statement has but little value when it comes anonymously. Will "Henry," whose letter is post marked Reading, Mass., let us know who he is?

The S. S. Question Books,

entitled "Lessons for every Sunday in the Year," continue to receive many favorable commendations, and are about equally used by all Christian Denominations. The series is completed.—No. 1. On the Four Gospels and Acts; No. 2. On the rest of the New Testament; No. 3. From Adam to Elijah; No. 4. From Elijah to Christ. Price 15 cents each; \$1.50 per dozen; \$12 per 100. If sent by mail, 3 cents each extra, in packages of ten or more; and 4 cents each, when less than ten are sent. Four sample copies (No. 1, 2, 3, and 4), for examination, mailed post-paid, for 65 cents.

Excellent Books.

—The list on page 44 gives the title and price of most of the books published on Farm and Garden work. Many of these are very good.—To sum up answers to a multitude of letters of inquiry, we may say that the following will certainly disappoint no one desiring first-rate books on the topics indicated:—*American Weeds and Plants*; *Barry's Fruit Garden*; *Downing's Landscape Gardening and Rural Architecture*; *Downing's Fruits and Fruit Trees of America*; *Flax Culture*; *French's Farm Drainage*; *Flint on Cows*; *Flint on Grasses*; *Fuller's Grape Culturist*; *Fuller's Strawberry Culturist*; *Harris' Insects*; *Herbert's Hints to Horsekeepers*; *Mayhew's Horse Doctor*; *Onion Culture*; *Quibby's Mysteries of Bee-keeping* (entirely new edition just out); *Rural Register*; *Rural Annual*; *Saunders's Domestic Poultry* (new); *Skiffull Housewife*; *Tobacco Culture*; *Watson's American Home Garden*; *Youman's Household Science*, etc., etc. The prices of these, and of other books, may be found on page 44. Every family, almost, would find the money required to purchase such books a paying investment.

Potatoes Mixing in the Hill.

—Tobias Marten, Mercersburgh, Pa., sends a red and yellow sweet potato, which grew on the same vine, and asks, if they will help decide the question whether potatoes will mix in the hill. It helps very much to decide that they will not mix in the hill, for it disposes of the only argument of the advocates of mixing. The mixers claim that when potatoes of different colors are found in the same hill, it is caused by a mixing through the blossom. Now, here is a case of two distinct colors from a sweet potato, which never blossoms at the North. How will the advocates of mixing explain this? We regard these instances as sports, which are due to some cause which is not understood, and probably never will be any more than why we have white black birds. These sports in color occur in leaves, stems and flowers without exciting any great wonder, or any suspicion of mixing; but when a sport happens to take place below ground, we are asked to accept the most improbable reasons for it.

Potatoes—Planting Single Eyes.

—Abel Stedman, of Herkimer Co., N. Y., says, that for four years he has practised using only large seed cut to single eyes, planted 2½ feet apart each way, 4 inches deep, and cultivated flat. With Garnet Chili his result this season was only one bushel of small potatoes to eleven large, the product of a single hill (one eye) being in one case five pounds, all large potatoes.

Oak "Knots" good for Horn

Knobs.—Iliman Holt, of Windham Co., Conn., writes, that he has been in the habit of using the great black knotty excrescences which grow often on the black oak, and are vulgarly called "nigger-heads," for making horn knobs, and thinks they are much better than if made of any of the woods mentioned on page 13. He saws out rectangular blocks of the right size, turns out the knobs and applies them about as we directed. The knobs outlast the lives of the animals.

Sew and Rip.

—One of the nursery legends told us about the good old lady who "knot all day to hear it purr at night." Many happy possessors of sewing machines in these days are so pleased with them that they would perhaps sew all day, if cloth was not so dear, or if they could rip the stitches out as easily as the old lady unraveled her stockings. This fortunately, perhaps unfortunately, is not the case with most of the good machines, though it can be done with those making the chain stitch, and this is often claimed as an advantage. The matter is of no consequence, however, to any one possessing a little implement invented by W. A. Fitch, which he calls a "Ripper." One of them was tried at home before we accepted an advertisement of it, and has since been used with a good deal of satisfaction. With a little practice it can be run rapidly along a seam and sever the stitches faster than a rapid machine can make them.

Testing Eggs Easily.—Housekeepers know how annoying it is, to have the fifth or sixth egg broken in a dish, prove a bad one, and spoil all the others. With rare exceptions, as in the case of a very thick shell, it is quite easy to know a good from a bad egg, by simply holding it between the eye and a light, as in the annexed engraving. Hold the egg so that the hand will cut off all direct rays of light, except those passing through the translucent egg. If in a dark room, the effect will be all the more striking. Dealers in our markets test eggs in this way very rapidly, as many as three to five dozen a minute, by taking up three at a time in each hand, and passing them quickly between the eye and the candle, in a partially darkened room. It is so easily done, that all dealers ought to test their stock before selling or packing.



Wants to be "Posted."—"D. R.," Keokuk, Iowa, writes: "I am unable to come to any conclusion, as to whether any thing can be done to a dry white oak (or other) post to cause it to stand longer, than it would if set without any preparation. I have set three acres of posts for trellises, and charred some and dipped others in coal tar, but they have not been in the ground long enough to test the question. I shall set 4½ acres more in the spring. I have seen many persons of experience who say, that neither tar nor charring does any good; while others say both are good. It is a matter of much importance, as thousands of acres are being 'posted' every year." The evidence which we have is all in favor of tarring, that is setting the butts of posts in hot coal tar (still better is to immerse the posts). Charring does very little if any good, except under certain conditions which are not well understood; for some charred posts stand a very long time, while others decay as quickly as if nothing had been done to them. We are always glad of facts that go to prove any thing.

N. Y. State Agricultural Society.—The annual meeting takes place at Albany, February 14.

Manure—Water vs. Salt to Prevent Burning.—C. Killmer, Oswego Co., N. Y., is told that two quarts of salt to the load of manure will prevent burning, and asks our opinion. It will probably have a tendency to prevent burning or "fire-fanging," but water judiciously applied, is a perfectly sure preventive. Make the heap flat and upon such a foundation that water will drain off from it readily; make also a tank or vat to hold the leachings, and then set a pump with which, as often as the heap gets warm, drench it with the leachings, or with fresh water. The labor will be well rewarded. The heat of the interior of the heap may be always known by a hard-wood pole kept thrust several feet into it, which may be occasionally withdrawn and felt of. Such a manure heap may contain two-thirds or more of its weight of straw, salt hay, or muck, and be worth in spring three times as much as if it were only manure.

Woolen Waste.—"S. K." makes the following inquiries through the *Agriculturist*:—"How shall I treat woolen waste in which there are many seeds of weeds, so as to prepare it for manure?" The best way is to put a large handful or so around each hill of Indian corn or potatoes. The seeds of weeds will soon vegetate and can easily be eradicated. If applied in this manner, they will all vegetate during the growing season. If plowed under, a portion of the seed may not vegetate within several years. Woolen waste is an excellent fertilizer for all grains, vegetables, and fruits.

Barn Weevils.—Thos. Maguire, Dauphin Co., Pa. We published last year the only sure cure for barn weevils which we know. It is to burn the barn; but if any one can tell of a plan, even though not so thorough, which will either exterminate or partially destroy this pest, we shall be happy to publish it.

The Selection of a Library is a work which needs high literary ability, good common sense, and business tact. Prof. H. B. Lane, whose advertisement will be found in our pages, possesses eminently these qualifications, and has given great satisfaction in the selection of both private and public libraries.

Fuller's Grape Culturist.—This book at once took the rank of a standard work upon grape culture, as it gives in a plain and concise form not only the practice preferred by the author, but the systems of training followed by others. It is a complete manual, giving

clear directions for every step from starting the plants from the seed or cutting, to the management of the fruiting vine, all fully and excellently illustrated. Price \$1.50

The Prize Barn Plans.

In August last, Mr. David Groesbeck, authorized us to offer \$300 in three prizes for barn plans, on certain conditions then published. Owing to the number of plans received, and the great study which was required thoroughly to understand the ideas of those who submitted them, it has taken longer to complete the examination of them and decide upon the best, than was at first anticipated. We are happy, therefore now to relieve the anxiety to know the decision of the committee by publishing it, and to announce our expectation of being able to give one or more of the prize plans in our next and succeeding numbers. There were 128 plans presented. Of these between 30 and 40 evinced much thought and study. Many were most carefully and even elaborately projected with perspective elevations, tinted in water colors as is usual with fine architectural drawings, and some two or three were elaborately painted in oil or water colors. The plans were boxed and sent to each member of the committee, one after the other; and when all had examined them, the gentlemen met at the Astor House, and after spending the day in examining and discussing the plans, and the points which each deemed essential to a good barn, they submitted the following:

REPORT OF THE COMMITTEE INVITED TO DECIDE UPON BARN PLANS.

To the Editor of the *American Agriculturist*:—The Committee after mature consideration and discussion together over the plans, agree as given below; although it is fair to say, that they arrive at a conclusion with no little difficulty, because so many of the 128 plans submitted are very meritorious. They find in no one of the plans all those points which they agree upon as essential; nevertheless the majority decide upon the following awards:

The first prize, \$150, to No. 51; [submitted by MYRON B. BENTON, Leedsville, Duchess Co., N. Y.]

The second prize, \$100, to No. 112; [submitted by GEO. E. HARVEY, Cold Spring, Putnam Co., N. Y.]

The third prize, \$50, to No. 120; [submitted by E. BOYDEN & SON, Worcester, Mass.]

[Signed] L. G. MORRIS, R. L. ALLEN, DR. F. M. HEXAMER, SAMUEL THORNE, SAMUEL J. SHARPLESS, Committee.

Mr. Donald G. Mitchell, a member of the Committee, was prevented attending the meeting. He sent, however, a memorandum of his views and preferences, which, it may be stated, do not accord with those of the majority, in respect to the order of the premiums.

Walks and Talks on the Farm.

No. 26.

I wish you had dropped in last evening. Mr. Chase, of the *Agriculturist* was here, and would have been glad to meet you. I believe this is his first visit to Western New-York, and I fear he did not form a favorable opinion of our agriculture. He thought we had very small barns! This, I take it, was a polite way of saying we did not raise as large crops as he had anticipated. We certainly, as a rule, need larger barns, but we need still more to raise larger crops. When a man gets good crops it is not long before he has good barns.

He asked me what was our principal crop, and I could not tell him! What is it? It was formerly wheat, but is it so now? We are sowing far more wheat than we did five or six years ago, and I live in hopes, that the "Genesee country" will in a few years be as celebrated for its wheat as in old times.

At present we are rather in a transition state. Old style farming will not answer, our land needs draining, and we must make up more and better manure. I suppose that while the roots of the original forest were in the ground, they opened a sort of passage for the water to pass through to the porous soil underneath. And this is one reason why land that was formerly dry and produced good crops, is now wet and comparatively unproductive. Then what I call the "natural manure" of our land—the rich deposit of leaves which had been accumulating for ages—is now pretty much used up; we cannot expect it to last for ever. If we manure a piece of land we get good crops from it for two or three years, but as soon as the manure is exhausted we must furnish another dressing. This is a recogniz-

ed fact, and the sooner we realize that the heavy coat of manure that nature kindly put on our land to give us a good start while the country was new, and while we had roads to make, houses and barns to build, everything to do and but little to do it with—the sooner, I say, we realize that this manure is gone, and that we must make more on our farms, the better it will be for the farmers and the country. Drainage and manures are what we most need. This would make our land as good as it ever was—and better. The climate has not changed. Our winters are no colder, thermometrically, nor our summer hotter, than they were forty years ago. The only difference is, that then our farms were protected by extensive belts of timber, while now the severe west winds sweep over us without let or hindrance. This must be remedied as far as possible, by setting out Norway Spruce and other rapid-growing trees for screens. Perhaps narrow fields and hedges running North and South will prove to be what we need. But be this as it may, judicious underdraining, good manure and belts of trees for screens, will give us as good land and as good a climate as we ever had, and there is no reason why we can not raise as good wheat, as good peaches, and as good crops of all kinds, as when the country was new.

Yesterday I found one of my men carding the cows! I have tried, often tried, to get this done, but never could get any one to do it willingly. I cannot account for this sudden conversion, unless it is owing to the fact that this man is fond of reading, and I lent him an English book in which this practice is highly recommended. Books and papers have a far greater influence with such men than is generally imagined; and I really believe that it would pay a farmer to make his men a present of a good agricultural paper, or of some such book as Todd's Young Farmers' Manual. The great drawback to the pleasures of farming, is the miserable class of laborers we too frequently get. I was greatly annoyed with them when I first commenced farming here, but have now only married men that live on the farm, and we get along very much better. They take an interest in what is going on, and that is half the battle. I have the misfortune to be considered as a sort of amateur farmer, and of course have difficulties to overcome which do not fall to the lot of an ordinary farmer of established repute. I had not calculated on this prejudice. I bought such implements as I thought were best. But I do not recollect one that was not pronounced useless. I got some steel plows, and you would be amused if I could recall the objections that were made to them. "They won't stand it on the clay spots," said one. "If you strike a stone where will you be?" asked another. "I don't believe they are steel anyway," said a third, and all agreed that they were very pretty things to look at, but they would not stand hard work. All this, you say, does no harm. But in that you are mistaken. These men are frightfully conceited, and when once they have said that a plow will not work, they consider their reputation at stake, and if you persist in making them use it, you must expect pretty large blacksmith's bills.

I have learned to pity the poor fellows, and, for the time being, yield to their prejudices. I laid aside the steel plows for the time being, and let them use the old ones they had been accustomed to. Then if they ever got short of points, I would tell them they must try and get along with one of the steel plows till we could get some more points. In this way we wore off the varnish, and the prejudice against them assumed a milder form. Still they never take one of these plows if they can help it. It will probably be two or three years before they get accustomed to them—then they will use no other!

The Squire wanted to borrow a plow last fall and I lent him one of the steel ones. A few days ago he asked me for the address of the manufacturers, saying, "It is the neatest and best plow I ever saw, and I must have one of them." He did not know the trouble I had had with them, and I could not but feel grateful for this unexpected testimony

to their value. Such remarks do good. It seems a small matter, but the opinions of one's neighbors have a great influence on the men. If farmers are prejudiced, the men certainly will be. I always feel glad to lend a new implement or machine to some good farmer. The men are afterwards more willing to use them.

"Give the cows a little bean straw," I said the other day.—"They won't eat it," was the reply. "Nothing will eat bean straw, except sheep."—I had had no experience in the matter, and so I yielded the point. But in the afternoon the Deacon called, while we were cleaning up the beans, and remarked that the straw was excellent for milch cows.—"But they say that cows will not eat it."—"They must be different cows from any I have ever kept. My cows eat it with avidity and I think it is nearly as good as hay."

I suppose the origin of the opinion is this: Sheep will eat beans, but cows will not; *ergo* sheep will eat bean straw, but cows will not. The fact is, however, that if beans are ground, cows will eat readily enough, and there is no grain that is more nutritious. But it is more economical probably to feed a little corn meal with it. The latter abounds in carbonaceous or "fat-forming" matter, while the beans are exceedingly rich in nitrogenous or "flesh-forming" matter. The two together are better than either separately. Of course at the present price of beans, it would not pay to feed them out, unless they are unsalable. But peas are very similar in composition to beans, and these, especially if buggy, can be fed out with profit. It is, however, better to feed corn with them. I give my cows corn and peas ground together, and never had them (at this season) give as much milk, or of as good quality. The cows, too, are getting fat. Some people think that a "deep milker" is never fleshy, and that a disposition to fatten is a sure sign of a poor cow for the dairy. But at this season of the year, I like to see cows gain in flesh. It is natural for them to do so. Calving is a great strain on the system, and nature prepares for it. To starve the cow at this season, is as foolish as it is cruel. Give her an abundance of nutritious food, and she will get strong and fat. And the fat is not lost.

"I have a cow," said one of our largest dairy farmers to me the other day, "that gives thirty quarts of milk a day in the summer. It is difficult to dry her off; and no matter how fat she gets in winter, she milks it all off in the summer."

Now, what becomes of the fat? It is not lost. Suppose we had two such cows, and one was turned out to the straw stack and fed barely enough to sustain life, while the other was comfortably housed and fed liberally. Suppose the latter laid on a hundred pounds of fat. If both are fed alike in the summer, and this hundred pounds of fat disappears, what becomes of it? *This fat is turned into butter.* Tallow and butter are, chemically, about the same thing. But the latter, as usually sent to market, contains 20 per cent. of water, while the former contains little or none. One hundred pounds of tallow, therefore, ought to give one hundred and twenty-five pounds of butter. The tallow is worth, say \$15, while the butter is worth \$50 at the prevailing prices.

This is not mere theory. The farmers in the dairy districts have found that nothing pays so well as to feed their cows grain during the winter. The cows are stronger and healthier, the calf is fatter, and the milk if not greater in quantity, is far richer in butter and cheese.

Last spring I bought a new milch cow. She was recommended to me as an excellent milker. She proved to be so, but the milk was little better than water. She was very poor—in fact little else than a bag of bones. She has been thin all summer, but since we commenced feeding grain, no other cow has improved so much. She is getting fat though still giving milk. I do not care how fat she gets, for I feel assured that I shall get it all back next summer in the form of butter.

"Them's dreadful nice hogs," said neighbor Sloe the other day, "and I must have one on 'em."

"They are certainly very nice pigs," but I told Mr. S. that they were not what he wanted.

"Why, what's the matter with them?"

"They are not thoroughbred."

"No matter, a pig's a pig for a' that. Give me a pig as good as one of these, and I don't care a rush for his pedigree."

"But you will not get such a pig without resorting to thoroughbred stock. These pigs are good—better probably than if they were thoroughbred. The sow is half Yorkshire, and the boar was a thoroughbred Prince Albert Suffolk. The little pigs have the length of the Yorkshire with the squareness and symmetry of the Suffolk. They are better (for the butcher) than either thoroughbred Yorkshire or Suffolk. This is often so with the first cross, but it cannot be repeated. You must in all cases have a thoroughbred sire."

"What is a thoroughbred?" A gentleman at Richfield Springs asks me this question. He writes: "Are Cheshire hogs a pure breed, and what is there about them to recommend them to farmers at \$75 to \$100 each, at six to eight months old?"

In one sense of the term, there are few if any pure bred pigs. They have all been more or less crossed. The modern English breeds of pigs, such as the Essex, the Suffolk, the Berkshire, the Middlesex, etc., owe their early maturity and fattening qualities to an admixture of more or less Chinese or Neapolitan blood. The original hogs of the counties whose names they now bear, were large, coarse animals, that were difficult to fatten. By judicious selection, and by the use of the Chinese hog, the proportion of offal parts has been greatly reduced, and a pig obtained that fattens readily and matures early. But this has been accomplished in most, if not in all cases, at the expense of size.

Now when the object of crossing with the Chinese and Neapolitan races had been attained—when a hog possessing the right shape, with little offal, and with early maturity and rapid fattening qualities, had been secured, the great object was to keep up the standard. The breeder rejected all hogs not possessing these qualities. By breeding in this way for a number of years—by selecting the best animals to breed from, carefully rejecting all that showed the slightest tendency to degenerate, the breed became established—that is, it had characteristics of its own, and these were uniform.

As I understand the matter, this is all that is meant by pure blood as applied to pigs. We need not go back to their origin. The only questions we need ask in regard to any particular breed of hogs are: (1) Have they the shape, size, quality of meat, early maturity, hardness and fattening qualities that we want; and (2) has the breed been raised long enough to eradicate all tendency to run back, or is it, in other words, fully established? If it is, it is a pure breed. If not, it is a mongrel breed that may give us a good pig, or may not.

"Are the Cheshires the pure breed?" I do not know. In a case of this kind, much depends on the character of the breeder. A pure bred animal, of desirable qualities, does not come by chance. It requires great care, perseverance, close observation, and a rare combination of qualities to establish a new breed of animals. There are few such men in any age or country. I do not say that the Cheshires are not a pure breed. Specimens of this breed (if it is a breed) have been exhibited at our State Fairs for several years, and have attracted notice by their immense size. The first time I saw them was at the State Fair at Watertown, in 1861, where one of these big pigs was shown that weighed 700 pounds. It was then said to be a cross between the Yorkshire and Cheshire. At the next Fair, held in Rochester, another big pig was shown, probably the same, that weighed 800 pounds; and at the State Fair in 1863, at Utica, a "Cheshire" was shown, probably the same, which weighed, or was said to weigh 1,100 pounds!

These Cheshires are undoubtedly the largest hogs in the United States. They have also many good points. They are long bodied, broad on the back, white and handsome, and altogether a very attractive looking pig. But are they pure? I am

inclined to doubt it. They have qualities, however, which could be turned to good account in the hands of some one who had the right capacity, perseverance, and patience, to establish a breed. Until this is done, however, it is hardly worth while to give high prices for these pigs. There is no certainty in regard to them.

Hot-bed Sash and Frames.

In market gardening, much of the success depends upon the earliness of the crops; hence many plants are forwarded in hot-beds, and the skillful gardener has his tomatoes, cabbages, etc., ready to set out by the time his slower neighbor is about to sow his seeds in the open ground. It is of no small importance in the family garden, to be able to add a month or more to the enjoyment of its products, and knowing that but very few out of the whole number of our readers avail themselves of artificial aids in their gardens, we often point out the way in which they can forward their plants and have earlier vegetables than if they kept on in the same old round. On page 61 some excellent advice is given upon sowing seeds in window boxes. This, in many cases, will answer every purpose, but often one has not convenient windows, or his operations are on too large a scale to be satisfied by this, and he must try frames. The choice lies between a cold frame and a hot-bed. The apparatus required is in each case the same. Both require attention and will fail under neglect, but of the two, the hot-bed needs the closer watching. The hot-bed will give plants earlier than the cold frame, and the cold frame will afford them much in advance of the open ground. But our present object is to describe the frames and sash rather than to give the management of them. Next month will be quite early enough for starting plants for the family garden in all northern locations. It is more convenient to have sash of the proper size, made for the purpose, but one can make old window sashes answer nearly as well. One great objection to window sash is, that cross-bars run in both directions, and thus form compartments which hold water. This can be obviated by cutting a piece out of the cross-bars down to the level of the glass, opposite the centre of each pane, and also out of the frame at the lower side of the sash, and thus form channels to let the water off. If sash are to be made, five or six feet will be a convenient length; the width must be governed by the size of the glass to be used. Four rows of 8 x 10, or five rows of 6 x 8 glass may be used. The sides of the sash are 2 inches wide, with bars running lengthwise only. The glass is bedded in soft putty and fastened in by tins, no putty being required upon the upper surface of the glass. Each pane overlaps the one below it, about a quarter of an inch. If the glass overlaps too much, there is danger of its breaking by the freezing of the moisture which collects in the joint. The durability of the sash will be much increased by strengthening it by means of a rod of $\frac{3}{4}$ -inch iron put across the middle. This rod should have a square head at one end, and a thread and nut at the other, so that it can be screwed up tight. Both the head and nut are countersunk, so as not to interfere with the free sliding of the sash. The sash should be thoroughly painted. The frame is made of a width corresponding to the length of the sashes, and long enough to accommodate two or three of them. It may be a foot high in front and two feet at the back, the end-pieces having a regular slope from rear to front.

Cross-pieces of plank three inches wide extend from front to rear for the sash to run upon; in the center of each of these is nailed a strip an inch wide, to guide the sash as it slides. A cleat will be needed at each end of the frame, to keep the sash from running off. This is nailed on the outside of the upper edge

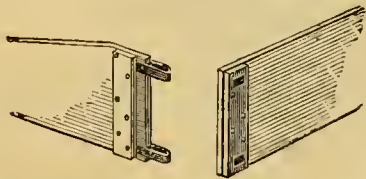


Fig. 1.—CORNER SEPARATED.

of each end-piece, and extends above it to a distance equal to the thickness of the sash. The front and rear edges of the frame will need to be leveled to allow the sash to run easily. The frame may be made of rough plank, securely nailed together, or it may be made with a view to greater durability. Unless the frame can be taken apart, it is an awkward thing to house when not in use, and if left constantly exposed, it soon warps and decays. The accompanying engravings show a plan for connecting the corners of a frame, given in Thomas' Annual Reg-

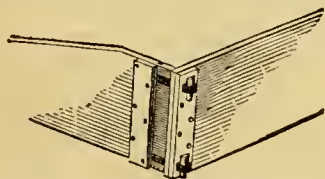


Fig. 2.—CORNER UNITED.

ister. Fig. 1 shows a corner separated and Fig. 2 the same put together. When a frame is made to take apart, this method will answer well to secure the corners. The portion of the frame which comes in contact with the earth, may have a coating of gas tar, and the rest be covered with some cheap paint.

Maple Sugar Making.

Our readers, who are interested in making maple syrup and maple sugar, look upon the subject from many different stand-points. With some it has been an important farm occupation at this season of the year, all their lives; with others, sap boiling on a larger scale than for a family supply of molasses, has been only undertaken now and then, when other work did not press; and with many, the whole subject is new. For the benefit of all, we would refer to articles which have appeared in previous years in the *Agriculturist*, particularly in the February number of last year, and to the Report of the Agricultural Department for 1862. Sugar making has received more thought and care in proportion as prices have advanced, and a good "sugar bush," or even a few good sugar maple trees are much more highly valued now than they were a few years ago. During the growing season the maple stores in its wood substances which are converted by the warmth of the spring, coming after the influences of the fall and winter, into a sweet sap. The sugar is "cane sugar," identical with that of the southern cane, but mingled with so few impurities, which incite fermentation and other changes, that it is very easily obtained in condition of considerable purity. The purer it is, the lighter colored; and the more rapidly evaporated, the more it retains the pleasant flavor peculiar to it. Artificial clarification removes this flavor, and the perfectly pure white loaf sugar, which

may be made, cannot be distinguished from that of the same quality from other sources.

It is always desirable to avoid injury to the trees by tapping; the incisions should therefore be made where they will do no damage to the timber, that is, below the cylindrical part of the trunk, where the sap will flow quite as abundantly as at any place above. There is nothing gained by cutting such large gashes, as are sometimes made when trees are tapped. In fact, some of the most thrifty trees when hacked in such a manner, commence decaying, and continue to rot until the body is nothing but a shell. It is unnecessary also to make deep incisions either with centre-bits, gouges, or axes, as sap will flow as rapidly if one or two of the concentric layers of wood are cut through. The best way to tap a tree is, to hew off the dead bark with a sharp ax, making a smooth place about as large as a man's hand. Then with a mallet and wide chisel cut two small convergent channels through the bark and into the wood in the form of the letter V, as shown by the illustration (Fig. 1). Then about two inches below the incision, make a gash with a 1½-inch gouge, and insert a metallic spout made of stiff zinc or galvanized sheet-iron. The spouts may be ten or twelve inches long, and made of strips one and a half inches wide, with one end ground or filed to a sharp edge. Cut a small channel in the bark from the V-shaped gash down to the spout. It is not necessary to cut through the bark when making this channel. The lower edge of the cut should be beveled downwards and inwards, so as to conduct the sap down to the angle. There may be several taps made in large trees, and each yield as much as if there were but one.

The tools needed for tapping trees in this way are, a mallet, a sharp two-inch "firmer" chisel, a 1½-inch joiner's gouge, and a sharp ax, or a carpenter's adze, for dressing off the rough bark. Insert the spouts as low as the top of the sap buckets, that the wind may not blow the liquid over the side of the vessel. When domestic animals are permitted to roam in a sugar orchard, trees must be tapped several feet from the ground and the sap vessels suspended by hooks. (See page 72, March, 1865.) The better way, how-

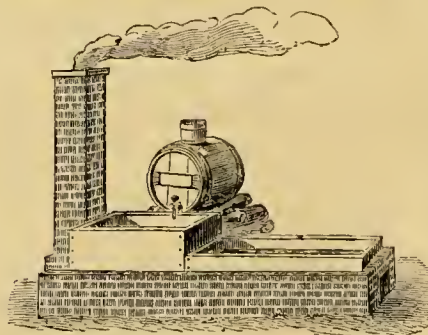


Fig. 2.—EVAPORATING PAN.

ever, is to keep all such animals in their appropriate enclosures, especially at this time of the year.

The best sugar makers all over the country are employing the sorghum evaporators, which,

with some slight modifications perhaps, are found both economical and convenient. Which of the many kinds in use is best, we cannot say, but "Cook's," one of the best known, is very highly commended. For those who cannot go to this expense, and would still pursue a much better plan than the old kettle swung on a pole, or set in a brick or stone fire-place, we describe a good home-made pan, or pair of pans (fig. 2), one being used as a heater and reservoir of hot sap, and the other as the evaporator. The sides and ends of the pans are made of 1½-inch planks of any kind of wood, (though maple, or beech is preferred,) and the bottoms of iron or zinc. The sides of the reservoir pan should be at least twelve inches, and of the other six inches high. As sheets of iron and zinc are usually made about twenty-six inches wide, the dimensions of the pans should be about one inch shorter and narrower than a sheet of the metal, so that the edges, after the bottom is nailed on, may be turned up with a mallet, and nailed to the outside as well as to the bottom of the wood, as seen in fig. 3. The pans rest at least three inches on brick walls, which are one foot high and eighteen inches apart. Bars of iron, or pieces of old wagon tire, support the bricks at the end. When every thing is made of the size here given, there will be ample room for the fire. The throat of the chimney should be about eighteen inches wide by four in height. This size will correspond with the fire-place. The height of the chimney should be sufficient to carry all smoke, atoms of charcoal and ashes beyond the pans and sap receptacles, as such substances falling into the syrup give it a dark color. A barrel or other closed vessel may stand, supported upon blocks or horses, so that the sap, which is strained into it through

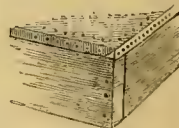


Fig. 3.—BOTTOM OF PAN.

directly into the pan; or several barrels or hogheads being used and set back from the fire, the sap may be conducted in leaders at pleasure, into the large pan, from which it is dipped into the shallow one. Such an apparatus may be erected at a comparatively small expense where bricks and lumber are cheap. Metallic or wooden faucets may be inserted in the ends of the pans for drawing off the syrup, or it may be dipped out, which is the usual practice. There should at least be a shed over the pans, but a more spacious and better built structure, with a tight roof and enclosed, so that the buckets etc., may be locked up in it the rest of the year, is much preferable.

When the syrup is nearly as thick as molasses, take it from the fire, strain it through flannel and let it stand till cold. Then pour it off from the sediment which will separate, and place it in a kettle or deep pan over another fire. As soon as it becomes warm, but not near boiling hot, add a pint of milk or an egg well beaten with ½ pint of water to each pailful of syrup, and stir thoroughly. When it boils, remove all the scum; keep the fire under control, and when sugar will granulate freely in small quantities of syrup (such as would adhere to a stick dipped into it), or when a little cooled on the snow is brittle, it may be removed from the fire, and as it thickens in cooling, dipped into molds, or well stirred until quite dry. "Strained sugar" is not boiled so long, and after it has cooled and granulated, being transferred into false bottomed tubs, and kept at a temperature of about 70°, more or less molasses is drained off from it, and a better quality of sugar obtained,



Fig. 1.—ELEVATION OF COTTAGE.

Small, Convenient, Cheap Houses.

BY NARRAGANSETT.

A very desirable quality in a cottage is *snugness*. Our idea of a *snug* cottage is one that is neat, compact, convenient, presenting within a limited space, a great amount of comfort. A *snug* cottage must be arranged, that the apart-

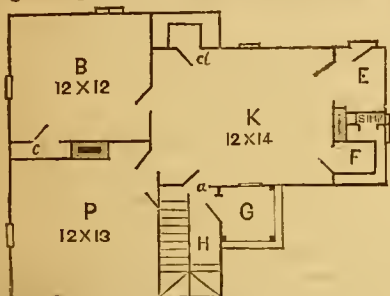


Fig. 2.—GROUND PLAN.

ments in most frequent use, shall be so connected that in passing from one to another, there will be no necessity for going through long, cold passages. They must be so brought together, that if occasion require, the genial warmth of one may easily impart itself to another, and one fire gladden all the house. In our climate we have seven or eight months of the year, when it would often be pleasant to have the chill removed from a room, though few families in ordinary circumstances, would feel that they could afford fires in several different apartments. With a proper arrangement of rooms, one fire may serve to cheer, in moderate weather, all the apartments in common use upon the same floor.

With reference to this idea of snugness of arrangement, this cottage plan has been prepared. There are upon the first floor (fig. 2) three principal rooms, the parlor (P), bed-room (B), and

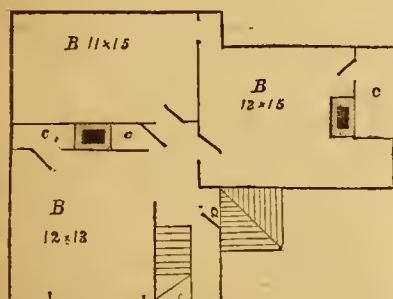


Fig. 3.—CHAMBER PLAN.

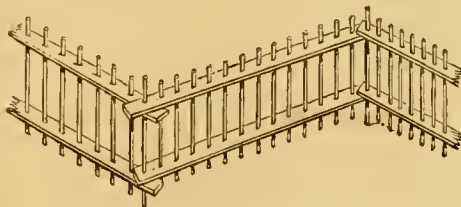
kitchen (K), all communicating. If desirable, a door may be placed at C, between the parlor and bed-room. In the hall (H) is a descent to the cellar at A. Opening from the kitchen, is

the pantry (P), which by a slide connects with the sink, in the back entry (E). A large china closet (D) also opens from the kitchen, and a clothes closet is provided for the bed-room. The kitchen, which will serve as the ordinary living room of the family, with a window upon each side, one looking out upon the porch (G), will form a pleasant apartment for many a social gathering around the winter fire. And on a summer evening, after the labor of the day is over, the little porch will have its attractions, equally accessible from the kitchen, or the parlor. A prairie rose, or Virginia creeper, or a fruitful grape vine should be trained against the wall beyond the porch, and carried up and entwined around the chamber window above.

On the chamber floor (fig. 3), are three bed-rooms (B, B, B) with closets (C, C, C), and another closet opening into the entry. These bed-rooms are all of liberal dimensions, and each has direct access to a chimney flue, in case a fire should be required in either of them. At A, over the porch, should be inserted a narrow window, (three panes of 10x12 glass would be sufficient); it may be hung upon hinges, and thus light and air be introduced to the entry.

A Good Kind of Hurdle Fence.

In answer to several inquiries from subscribers of the *Agriculturist*, concerning hurdles, we herewith illustrate a section of fence which can be made cheaply, where timber is not too costly, and which will be found durable and convenient. The panels are made about twelve feet long and three to four feet high, according to the character of the animals to be confined, or fenced against. Each panel consists of two rails of 1 1/4-inch stuff, about 3 inches wide, with pickets 1 1/4 inches in diameter driven into



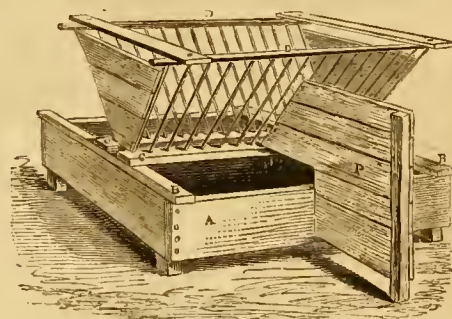
HURDLE FENCE.

holes bored through the rails 6 to 8 inches apart. The pickets are usually turned out in what is called a "cat-head lathe," with which fork handles, chair rounds and posts are turned out, and ought not to cost more than a cent a piece. Sometimes, however, the holes are bored with a bit that will cut a clean orifice, 1 1/2 inches in diameter, and square pickets are inserted. When constructing a fence of ordinary height, the pickets should extend not more than 8 or 9 inches through the rails. A few of the pickets are nailed to keep the rails a suitable distance apart. The panels are kept erect by passing the end pickets through the rails of two panels, as shown, and setting the panels zig-zag. Such hurdles may be made of basswood, white wood, butternut, sugar maple, or of more durable timber. After the fence is finished, the whole should have a heavy coat of coal tar, which should be worked into the joints to exclude the rain. When set up to remain any considerable length of time, there should be flat stones or bits of board placed under the corner and middle pickets to keep the fence above the

ground and prevent sagging. Such fences will be found convenient for encircling a hay stack. The panels may be set in a straight line with braces to keep them erect, or in a rather contracted circle without braces.

A Good Fodder Rack.

We herewith give an illustration of a fodder rack, to stand under a shed, or in the open yard, which is superior for that purpose, to any other style that we have ever met with. It is portable, requires but little skill to make it, and its



FODDER RACK.

construction is such that it is almost impossible for animals to waste any fodder. The part marked A, represents a box 6 feet square, and 20 inches high, with pieces of 2x3 inch scantling in the corners, which serve also for feet. B, B, represent two pieces of scantling for supporting the main part of the rack. C, C, and D, D, are also 2x3 scantling. They may be larger than this if desirable, or the top ones may be made of round poles. The sides of the rack should be about 3 feet apart, and the rounds set 4 inches from centre to centre. The most expeditious way to make the rounds or slats is to saw them out of hard-wood boards, which are not cross-grained and knotty. Slats 1 inch square are sufficiently large for ordinary racks. P, represents a partition on one side of the rack, the ends of the boards being nailed to a small piece of scantling. With such a partition on each side, a square rack will accommodate 4 cattle very well. The long boards should be about 12 feet in length and extend through, forming the partition on each side of the rack. When such a rack is made without any partition, as shown on the rear side of the engraving, two cattle will seldom feed on one side, as the master animal will usually stand lengthwise, and sometimes haul the fodder out faster than it is eaten. But when a partition is erected, as shown, most cattle will stand side by side facing the rack, and drop the loose fodder in the manger, instead of outside the rack where it will be wasted. The pieces C, C, should be about 8 inches apart, with a board between them, and pieces D, D, about 3 feet distant, and held in place with narrow boards bolted upon the top.

The pieces C, C, and the brace boards on the top being secured by carriage bolts, when these are removed, the rack may be taken off, and knocking off the end boarding, and taking away the partition, the whole affair may be snugly stowed away for the summer under cover, and thus be made to last a great deal longer than it otherwise would. Stationary racks around a yard, unless placed under sheds, are constantly rotting away, and the especial advantage of such a yard-rack as we describe is, that it may be taken down and sheltered, and set up again with ease. All the parts, except the long boards of the partition, may be made so as to be readily packed inside the box.

Cut Feed—Chaffed Hay, Straw, etc.

In these times of high prices, it seems needful to renew the inquiry whether more pains should not be taken to cut feed for stock. Careful experiments show that hay chopped fine affords about a quarter if not a third more nourishment than coarse hay. So then, if the gain is more than equivalent to the cost of the labor, it is good policy to cut hay. The reason cut feed goes so much farther than coarse is this: The woody fiber of the hay, after it is chopped fine, is more easily masticated, and is more intimately mixed with saliva and digested, and so becomes nutritious and fattening. Still more, if the food is steamed, or wet with scalding water, it carries on the process further and better. Now, add a little meal, and the fodder is more nutritious and every way better.

If the foregoing be true of hay, it is more so of straw and corn-stalks, because they contain more cellulose matter, or wood fiber, and less starch and nitrogen. Experiments show that some four-tenths of this woody fiber may be assimilated, and so converted into fat. But to secure this result, it must previously be made fine by artificial processes. Alderman Mechi is reported to have said that 100 pounds of straw cut and steamed is more nourishing than the same weight of Timothy hay not chopped. We suspect his experiments were made with over-ripe hay, and straw harvested "in the milk." Either his hay was not as good as our Yankee hay, or his straw was better. *

For the American Agriculturist.

Superiority of Italian Bees.

The highest test for the purity of Italian bees, is their greatest difference from black bees: namely, the greater prolificness and length of life of the queens; the greater industry and consequently quiet temper of the workers; the greater size and beauty of the drones; all these extreme qualities are found fully developed in each of the distinct kinds of bees in the hive, and they should be preserved to maintain purity. The nearest approach to perfection is obtained in a dry, clear atmosphere, and a continual harvest of flowers. The loss of these points of excellence is in the extremes of heat and cold, and in barrenness, and want of ventilation. By becoming chilled in winter, large numbers of queens become worse than useless.

The great difference then is not that Italian bees are really more industrious, but that they are *more nearly perfect*, and the queens more prolific; and prolificness seems to us to be the best test of perfectness. We have removed one comb daily well filled with eggs from Italian queens, while no black queen we ever tried filled her comb in less than two days. One of their most estimable qualities is the mildness of their temper. Their worst fault is their liability to cross with black bees, which gives an opposite character. In a stock of Italians, black, and cross-bred, bees mixed, the half-breeds are first and most easily aroused to anger, the blacks next, and lastly, and with difficulty, the Italians.

When the number of black stocks are increased, they become more and more uneasy; fearing one another, more bees remain at home. With Italian bees it is different, what they do has more definiteness of purpose. To work seems the one law of their existence, whether they have 100 lbs. of honey stored or only 10 lbs. Bees do not store honey in anticipation of

needing it in winter. For if one drives out a stock late in the fall, those remaining will consume the honey gathered in brood raising, and will continue to do so after flowers fail, if fed a moderate allowance daily. Nor does a cold climate increase their stores, except as cool nights check its evaporation, thickening and increasing it. For this cause also, Italian bees being more hardy, and working earlier, gather a greater quantity than the black bees, which are required to collect the less amount which the plant replaces. The reason bees work less in a warm climate is, that the honey gathered, long remains too fluid for sealing. This shows the necessity of ample ventilation during the working season, to carry on this necessary evaporation and thickening of the honey even in a temperate climate, or in a close situation.

We placed several stocks of bees in a close, deep ravine, and found the bees gathered honey faster than it thickened, and consequently left large quantities unsealed, which soured. This sometimes happens in wet and cloudy weather, but less frequently with Italians than black bees. Italian bees are somewhat longer, and reach the honey in deeper flowers, being quicker to go and return, or perhaps, go farther, and living longer, can secure more honey. The Italian queens are of a beautiful light straw-color when young, changing to a deep orange yellow when old, except the extreme tip, which changes with age, from brown to black. All her worker progeny are alike, with long tapering bodies, marked with three bright yellow rings, commencing at the "waist," which are divided by two longitudinal lines of brown, then three rings of black (including the tip), edged with two small bands of yellow down. The drones have but four abdominal rings, the two nearest the waist are of a light, rich yellow, enlivened with the colors of the rainbow. The light yellow of young queens, drones, and workers, by crawling in and out of the cells, becoming smeared with honey, or otherwise, changes to a deep orange, and the brown and yellow down to black. Sometimes their change occurs in early life, but generally in old age.

Minnesota.

BIDWELL BROS.

European Notes on Hop Culture.

One of the most experienced hop-growers of this State, Mr. F. W. Collins, spent the past summer in England, and on the Continent, engaged especially in looking into the culture and trade in hops. Having recently returned, he sends us the following notes which will be read with interest by American hop-growers:

"The districts where hops are grown comprise some of the most beautiful farming country of England. The Hop crop is considered as one of the most paying in England, as it is now one of the most important products of this State, and rapidly increasing in importance, in other States of the Union.

"During a recent tour among the great hop-districts of England, I had the opportunity of freely conferring with the best growers of Kent, Sussex, Surrey, Worcester and Hartford, where nearly all the hops in England are grown. The Eastern and Central parts are the only ones in which they are raised, while here, almost every part of our broad country is adapted to their growth even better than England, as will be shown by comparing the product of that country with our own. There was an excise duty and an import duty collected in England for many years, both of which by Mr. Gladstone's

efforts, were removed, about four years since; the official reports show the number of acres and the whole product of the country accurately. The average yield per acre for the last 23 years that are reported, was less than 7 cwt., the greatest average which was in 1850, was 11 cwt. 10 lbs., the smallest average, in 1840, was 1 cwt. 2 qrs. 8 lbs., the number of acres in hops in England, has been for many years about 50,000, and is put by good judges at from 55,000 to 60,000 at the present time, there being but about one-third as many in this country, but the hop crop is rapidly increasing here, and the demand for hops is growing faster than the increase of the crop. Our census report does not give our average; in 1850 less than 3,000,000 lbs. were raised; in 1860 over 11,000,000 are reported, and last year there must have been nearly 18,000,000 lbs. produced. This year the crop is considered a failure, on account of the hop-louse and the blight, yet I estimate the crop at 400 lbs. to the acre, not more than one-half what is wanted for consumption by the trade, and the price is high.

"In England, the crop was good, called by the factors and most of the farmers a high average. I saw them sold at several markets at £5 to £10 (\$25 to \$50) per cwt. Bavarian hops sell much higher than English, some as high as £16 (\$80). The price varies very much in different parts of England. East Kent, Farnham, and Worcester, have a high reputation. I think very much depends on the care used in picking them clean, keeping them whole, and the skill in drying them. The English factors admit the superiority of the American hop to theirs in strength. The new kiln which received a Silver medal at the N. Y. State Fair, is the best system of drying hops yet used, all who have seen the model admit it. It is described in your 'Hop Culture.'

"Within a few years past the system of growing hops on stakes and twine described in the first prize essay in the book you published on Hop Culture, has been used in nearly all parts of this country, where hops are raised, and as far as I have learned it gives satisfaction, it is very economical, not over one-fourth the expense of the long pole system, requires less labor, produces better hops, and in most cases much larger crops, and the hops are gathered without cutting down, which is of great importance in preserving the root, as then no sap is lost by bleeding at picking time. I found this system in use in England in a few gardens, for the first time this season. One plantation had 35 acres on this plan belonging to Messrs. Simmons & Hunt, of Maidstone, Kent; they used it on 6 acres last year with satisfactory results, and said they got as many bushels of green hops per acre, and of a quality and color much superior to any on poles. This process is patented in the United States and England, and also in Belgium, Holland, and Bavaria, and other hop-growing countries on the continent. Austria is a very excellent hop district. The number of acres in it and its dependencies devoted to hops, is about 150,000, and it is said to consume all the produce. The following extract from the correspondence of an English paper of last May, will show the horizontal plan is appreciated.

"In the autumn of last year I drew attention to the importance of preserving the hop vine until the leaves had fallen and the sap had ceased to flow. I advocated the American system of training the plant on strings, stretched from pole to pole, in order that the crop may be gathered without the necessity of cutting down. I have just returned from Kent where

I have inspected a field upon a portion of which this system was tried last year. The field was everywhere subject to the same cultivation, and if any thing the crop was superior upon the strings. The half acre upon which the experiment was made can now be distinguished without the slightest difficulty. Scarcely a plant has failed, and on an average, the new vine is fully one foot higher than in any other part, and is strong and healthy in proportion. It is already well established on the poles, and is from three to four feet high, being at least a fortnight in advance of any garden I saw in my short tour. The experiment will be extended this year, and as it is not yet too late, I would seriously urge an extensive trial by large hop-growers, in the strong conviction that it is most important to reform the present system of picking, which is contrary to every principle of vegetable physiology.

"Your book on 'Hop Culture' (see Book List) should be in the hands of every hop-grower. It contains all the information necessary, it is a perfect manual of instruction for a novice."

Agricultural Education.—The Public or District School.

In an article on page 11 on "The School in the Family" we take it for granted that the farmer's boy can attend school. Happily this is the case almost everywhere in our country, except in the ruder settlements of the West and the less populous parts of the South; but unhappily the character of the public schools in many sections, even in the Eastern States, is very poor, so poor indeed that it is a matter of but little regret that school keeps but four months in the year. Certainly no question should come home to every farmer with more force than the inquiry—"whose fault is it that the district school is no better?" We know it is often very hard to induce a community of little-thinking men to tax themselves any more than they can help for any thing. And if the school is better than it used to be, and the boys are picking up from newspapers and story books, "a better education than their fathers had," any movement to have a better house and better teachers will be very apt to be voted down in town meeting as often as it can be brought up. It is useless to argue on moral principles with the men who are not in favor of giving their children the very best education they possibly can, nor with those who, perhaps, having no children of their own, neither think nor care how those of their neighbors are educated. There is an appeal to personal interest which they will heed. It is not hard to demonstrate by examples almost everywhere, that the thoroughness of the schooling has a great effect, and that very soon, upon the general intelligence and moral sense of the community, the security of property, the value of real estate, etc. Crime is diminished; invention and mechanical ingenuity quickened; better farming obtains, and the general welfare of the whole community is greatly increased. It is, in fact, hard to set bounds to the inevitable, and elevating influence of a good district school well maintained for a series of years.

It is every citizen's bounden duty to do not only his share towards maintaining a good public school in his neighborhood, but he should be active and earnest in having it just as good as it can be. It will put money in his pocket even though he be an old bachelor without any expectations, or a day laborer without family. There are always those in every community

who appreciate the value of a good education for their children. Such people are very apt, after some discouraging efforts to have the public school good enough for their children, to send them off reluctantly to boarding schools at a distance, or undertake to have them instructed at home by private tutors. This is a bad practice. It is more democratic and in every way better to have the children of all stations in life, and of families of every grade of wealth, meet on the same level in the public school, the only qualifications for school membership being fair morals, soundness of mind, and personal cleanliness. There is little danger of children well trained at home getting harm at such a school. There is far more danger at boarding schools where boys and girls are separated from the influences of home, especially if they are sent away in tender years.

It matters not how carefully children are kept away from evil influences, they will inevitably meet them at some time and somewhere. Temptations to do wrong will come, if not in company with others, then in their own hearts and when quite alone. Real moral strength comes with meeting and resisting. This the child of six years old is just as well able to do as the grandsire of sixty; and is it not written "as thy day, so shall thy strength be?"

The public school teacher should be possessed of moral power. Do not employ a man of so little force of mind and goodness of heart combined that he has to govern by the rod—much better have a gentle woman with persuasive graces and loving temper. Any teacher who shows anger should be dismissed at once, no matter how much he knows. To govern one's self is more important than to govern the school. Very great learning is seldom a desirable qualification; but, with good general knowledge, great accuracy is. A teacher's language should be easy and correct always, his pronunciation perfect. He should read easily and well, and spell well, and have a fair knowledge of arithmetic. With these qualifications, if he is not lazy, he will be a good teacher who loves his work and loves his pupils. In regard to mere book knowledge, of even those things which he is to teach, as geography, history, etc., he can study faster, read more than, and keep thoroughly ahead of his pupils, if he has only a general understanding of his subjects.

The primary school teacher's chief business is to furnish a child with the means of acquiring knowledge, and a love for it; to give the child a knowledge of written language, so that he can comprehend books and put himself in communication with the thinking world; and to so far instruct him in regard to the world around him that he shall leave school with earnest desires to learn more. So he is instructed a little, and a very little it is, in geography; he gains a little insight into mathematics and numerical relations (learns to count pennies and compute interest perhaps); he studies history of the United States and thinks he understands all very well; and so it is with other things. But most unfortunately neither school-books nor teachers tell their pupils where they can go for fuller knowledge and minute information on these subjects. This great want is in part supplied by good district school or public libraries where they exist, but the desire for such libraries and the use of such as exist might be greatly increased by suitable references in the school-books in general use, to instructive treatises. The subject exceeds our space in the present number, and we must continue it at another time.

The Cultivation of Peppermint.

Occasional accounts appear in the papers of the large sums realized from the peppermint farms of Michigan and Western New York, and these naturally suggest to some of our readers to ask why we do not publish articles on peppermint culture. We are a little shy about saying anything about specialties which shall induce people to engage in undertakings for which they are not well qualified, and which, if commenced, would in nineteen cases out of twenty, result in loss. Mint growing has in many instances proved profitable, but it involves not only cultivation, but the immediate manufacture of the product into oil; a process which though not complicated, yet requires care and skill in a sort of manipulation with which farmers are not familiar, and it is one which to be profitable must be carried on in a large way. If any one wishes to start an enterprise of this kind it would be time and money profitably expended, to visit localities where the culture is established, and where he could in a few hours see and learn more than he could from any detailed description. Another thing to be borne in mind is the fact that the oil of peppermint is an article for which the demand is limited, and that it is one the price of which is subject to great fluctuations. Mint does best in a light, rich and warm soil. It is propagated by sets or parts of old plants. The mint spreads rapidly by underground branches; the old plants obtained by plowing up a field may each be divided to form several sets. The ground is well prepared as for a potato crop, as early as the season will permit, and furrows are marked out from 18 to 24 inches apart. The planter carries a bag of old plants from which he pulls off a portion, drops it into the furrow and covers it with his foot, putting them so thickly in the furrow as to nearly touch one another. During the season the weeds are kept down by the use of the cultivator and hoe until August, and by the latter part of that month the plants will have nearly covered the whole surface. The cutting commences when the plant begins to flower, and is done with a cradle or grass scythe, the mint cocked in the field and allowed to wilt and then taken to the still. The still consists of a strong wooden tub, 4½ feet high, and 6 feet in diameter, with an opening in the top for charging it, which can be made steam-tight. From near the top of the still a tube connects with a condensing worm, and at its lower part is inserted a pipe which conducts steam from a boiler. The tub or still being crowded full of the wilted mint, and the cover fastened steam tight, steam is let on from the boiler, and after the whole mass is heated through, it passes into the worm where it is condensed. The steam carries the oil of the mint with it and both are condensed together, and the water and oil are caught in a receiving vessel where they separate the oil floating upon the water. The first year's crop gives the best quality of oil and the greatest yield per acre. The second year nothing is done but to destroy the few weeds and cut and distil the mint. The third year, the field becomes overrun with weeds and the product of mint is small. The fourth year the field is plowed up to kill the weeds, and enough plants spring up from the broken roots to give a fair crop. The fifth year the field without much attention gives a crop about equal to that of the second year, and after this the land is put in grass, and allowed to recover its exhausted fertility for a few years, when it may be planted again with mint.

Some of the Newer Potatoes.

It may shock our pomological amateurs if we declare that we consider the advent of a new and superior variety of potato, cabbage, or other culinary vegetable, of as much importance as the acquisition of a new pear or grape. Fine fruit is unfortunately only of interest to the few, but a fine potato appeals to every one. We figure some of the newer potatoes, which, if they confirm half of what is claimed for them, will prove valuable indeed.

Early Goodrich.—The late Rev. C. E. Goodrich, of Utica, N. Y., is gratefully remembered for his labors towards the improvement of the potato. He raised 16,000 different seedlings, and this, in the opinion of competent judges, is best of all. It was raised from the seed of the Cuzco, which is itself a seedling from the wild Peruvian potato. The engraving is half the size of an average specimen. The eyes are large and full, skin white and smooth, flesh white. As a table potato, and we have tried it in various ways, it is unexceptionable in



Fig. 1.—EARLY GOODRICH

quality. This variety was, we think, first sent out in 1864, it has been tested in various parts of the country, and all the reports we have seen respecting it are unanimously in its favor. We have not yet grown it, but several of our friends assure us that it will yield from 300 to 400 bushels to the acre, that it is as early as any, and that it is perfectly hardy and free from disease. We are glad that the name of Mr. G. is to be commemorated by so excellent a variety.

Harrison.—This is also one of Mr. Goodrich's seedlings, and it came from the same seed ball as the early Goodrich. It is a handsome white potato, with very small depressed eyes. It was named by Mr. Goodrich in compliment to Mr. A. W. Harrison, of Philadelphia, an account of whose experiments was given in December last. It matured in September and was the most productive of all the varieties tried by him. We have only been able to make a single trial of their quality, and found them to cook mealy and to be of very good flavor.

"Monitor."—This is said to be a seedling raised by Mr. D. A. Bulkley, of Mass., but it appears so much like the Prairie Seedling, that, judging from the tubers alone, we should say they were identical. A comparison of the two in growth will be necessary to settle the question. It is very



Fig. 2.—HARRISON.

large, somewhat flattened, and rather square in outline. It has a pinkish rusty coat and very

deeply sunken eyes. It has the reputation of being a great bearer and of good quality for the table. The figure of this, as well as of the others, is of half the actual size of good specimens. In order to save our readers trouble, we will state that we have heard of none of the

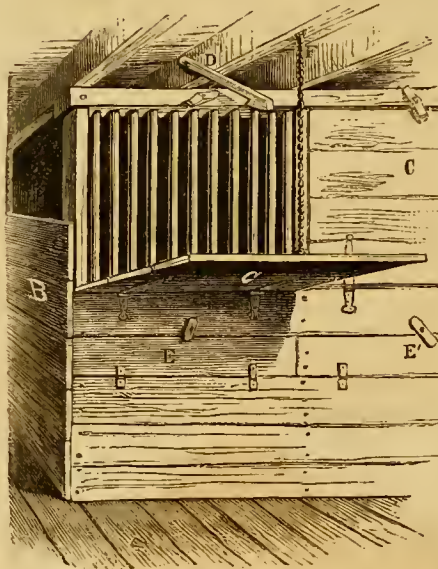


"Fig. 3.—MONITOR."

Harrison being for sale this year, and that the others are each advertised by several dealers.

A Good Rack for Horse Stables.

The illustration shows a rack and manger superior to many in common use. The horses may be fed without entering the stable. Boys can clean out the mangers and feed horses that they dare not approach, nor handle. The rack and manger constitute the partition between the stalls and the feeding room. *B* is the side of the stall. *C* is the flap for holding hay against the slats of the rack. This flap is hung with hinges to the casing below it, with the front edge supported by a small chain, rope or strap (*F*), fastened to a joist above. The upper side should be planed, so that the hay will slide downward readily. After the hay has been laid



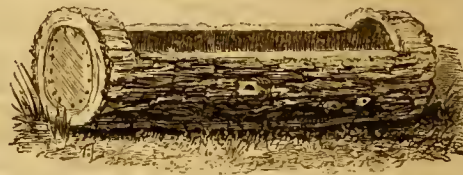
RACK AND MANGER.

on the flap, it is raised up until the catch, *D*, attached to the joist, receives the edge. The proper position for the flap is at an angle of about forty-five degrees. Hay will then slide down so as to be reached by the horse. *E* represents the shutter to the manger, which should be so narrow that a horse cannot possibly thrust his head through. The flap on which the hay rests may be buttoned close up against the slats. This feature will be found convenient when thrashing, to exclude dust from the stable. The slats should not be more than three inches apart in the clear. If the spaces are wider than this, horses will pull out hay faster than it is eaten. By having the slats of the rack placed perpen-

dicularly, hay seed and chaff can never fall on the necks and heads of animals, as they otherwise will. This is a good style of rack for neat cattle, when made at the proper height. The correct height of a manger for horses is, a little lower than they ordinarily carry their heads. When a manger is built too high, any animal will waste more feed than if it is made low.

Hollow Logs for Water-troughs, etc.

Hollow logs are often considered worthless except for fire wood, and neglected for this purpose because they are so hard to split. This very quality makes them the more valuable for the purpose we suggest. Select a straight log 8 to 16 feet long, of suitable diameter; cut it squarely at each end. Then cut a notch with an axe or saw about ten inches from each end, and one quarter way through the log, making the notches of exactly the same depth if the log is cylindrical, and accurately corresponding in position. Then take out the wood between the notches, clean out the inside and trim the edges with an adze. Now saw out two pieces of inch or inch-and-a-half board for the ends, which shall be large enough to lap a full inch



HOLLOW LOG FOR WATER-TROUGH.

beyond the hole upon the solid wood; mark out the size of each board upon the ends of the log, and, with a chisel, cut out a rabbet so as to let the board in snug, its full thickness. Now lay in a piece of rope yarn, or a string of oakum in the bottom of the rabbet, drive in the end piece, and nail it in strongly. The seams may be calked with oakum and "paid" with pitch outside and in. It is well also to go over the entire inside with hot pitch. Such a trough will last much longer, bear more wetting and drying, and other wear, than if made of a solid log, and it is besides very much easier to make.

Dike for Reclaiming Salt Marshes.

Correspondents are calling for information upon this subject. We are glad to know that the good seed we have sown in years past has not all perished. We still believe that the most valuable grass lands in our country are the salt marshes that line our shores, and stretch far inland along our tide-water streams and coves.

The dike or embankment is the main difficulty, and here the courage of most rural improvers fails them. Where a railroad runs along the front of the premises to break off the sea, the work is easy, and fortunately there are thousands of acres all along our shores that have this most expensive part of the work done for them. They wait only the enterprising man or company who will yet surely take hold of them and make fortunes by reclaiming them.

But what can be done for the snug little patches, of a dozen acres or less, that lie in countless numbers upon our shore farms? They can be redeemed economically by the style of dike represented in our illustrations. It is well known that the soil of all salt marshes is made up very largely of vegetable matter, and is exceedingly light and spongy when dry. Such a material is entirely unsuited for a dike without additional



Fig. 1.—TIDE GATE AND DIKE.

support. This may be afforded either by planks or by clay, or any heavy soil that will pack well, as represented in the engravings.

In the figure 2 we have a cross section of such embankment with its accompanying ditches. *A*, represents the section of compact soil or clay taken from the adjoining bank or fields, extending perpendicularly from the hard pan to the top of the dike, and along the whole sea front of the marsh to be reclaimed. The left hand side is toward the sea, the right toward the land to be drained. Begin the work by cutting out the section *A*, down to the hard pan, and piling the sods on the edge toward the sea, making a perpendicular wall to support the clay. The muck that is taken out below the sods to support them, and so add to the embankment. After a few rods have been prepared in this way, the clay should be brought and

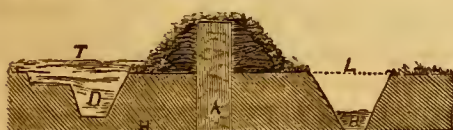


Fig. 2.—NARROW DIKE.

dumped into the ditch and be packed with a rammer in the most thorough manner, until the excavation is filled to the surface of the marsh. You now want to raise the other section of *A*, above the level of the marsh, and you do this by taking the sods from the ditch *B*, on the inside of the embankment. Sods enough may be taken to form the support of the clay packing, and the rest be reserved to finish the embankment, presenting a smooth surface of well packed sods at an angle of about 45 degrees.

The breadth of the clay packing is to be determined by the height of the embankment, which of course must have reference to the height of the tides. The dike should be at least a foot above the highest known tide. If the dike is not more than three or four feet above the level of the marsh, a packing eighteen inches thick will be sufficient to keep out the tide. The greater the pressure upon the dike, the thicker the packing, and the higher and broader the embankment should be. In case of very high embankments, a second packing as shown in the illustration (figure 4) may be necessary.

In some locations it may be necessary to expose the embankment to the direct action of the sea. If there is to be violent action of the waves, a sea wall will be necessary. But this

is not usually the case, in those small parcels of marsh land that a farmer would be likely to undertake to reclaim with his own capital. The expediency of cutting a drain on the outside of the embankment is to be determined by the quantity of material needed. It is not in itself desirable. If the inside ditch will furnish material enough it is better to leave the outside unbroken. In digging the inside drain, a rim four or five feet wide should be left between the ditch and the edge of the embankment. It makes the bank stronger, and is an additional safeguard against the burrowing of muskrats. In all cases the banks of the ditches are to be left with a slope. It is found that these sly depredators work much more readily into a perpendicular surface than into a slope.

As to the width of the embankment, it is desirable in all cases to have it wide enough for a cart path, but where the embankment is low, and the pressure of the water is small, this is not necessary. The use of the bank for a path would often be found a great convenience in drawing sea weed and manure, and in removing crops, and it tends, also, to solidify the dike and make it more durable. The inside slope of the bank should be sown with clover and herdsgrass both to its usefulness and permanence.



Fig. 3.—BROAD DIKE WITH CART PATH.

A good example of successful diking upon a small scale may be seen upon the premises of Col. Hanks Head, of Mystic, Conn. We wish our correspondent, and all others who contemplate improvements in their salt marshes, the largest success. No enterprise, we are confident, promises a larger reward.

The limits of a single article will not admit of discussing convenient forms of gates, etc., but the engraving, Fig. 1, at the head of the page will give a good idea of one of the simplest kinds. A trunk 18 inches square passes through the embankment at the lowest convenient level. It is constructed of 2 or 3 inch oak plank, laid in masonry and cement; or it only enters the masonry far enough to gain strength and solidity. On the outside end a gate is hung, as shown, the hinges, nails, etc., being of composition metal, and the bottom of the trunk inside being protected by a sheet of copper to prevent muskrats gnawing holes in it.

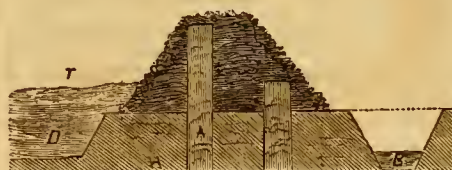


Fig. 4.—HIGH AND NARROW DIKE.

The exterior ditch shown is usually seen, especially in cases where salt-hay may be cut outside the dike; it is useful in letting off the water rapidly when the tide falls.

Glanders and Farcy.

With an article on glanders in the October number (page 309) we gave a particular description of this disease, when it attacks primarily the nasal cavity, the bones of the face, and, under some circumstances, however, dependent probably on the condition of the system of the

patient, the lymphatic system is attacked. The vessels immediately beneath the skin become hard and cord-like, and the nodes and glands swelled, hard and sensitive to the touch. These swollen glands, termed "Farcy buds," after a while suppurate and form ulcerous drusy sores; and these, when the affection is localized and intense, become confluent, in a measure.

They exude a pale yellowish white or darker colored, unhealthy matter, quite unlike the pus accompanying healthy granulation, or common sores. The sores not unfrequently remain inert, and sometimes yield to external applications and appear to be healed; but the appearance is deceptive and they break out worse than before.

Farcy shows itself on the sides of the face, neck, body, the inner sides of the legs, and sometimes on the exterior sides. The inner sides of the legs are the most common places for it to show itself, especially if there is a tendency to dropsy or a dropsical enlargement of the extremities. It is usually, at least at first, confined to the inner side of one leg. The accompanying illustration is taken from a picture by a veterinarian, of a case which came under treatment at the Royal Veterinary College, London. It exhibits a confluent condition of many of the ulcers, the skin nearly gone, and the leg swelled and dropsical. Farcy always terminates in glanders, and the symptoms of glanders are commonly observed very soon after the farcy symptoms are well developed.

Inoculation with the virus from these sores produces glanders or farcy, according to the condition of the patient. Accidental infection or inoculation may easily occur in various ways, and may affect either men or horses. Two cases of the death of grooms from glanders have recently been reported in the papers, and we presume others may have occurred and the disease not been recognized. When the activity of the disease is wholly confined to the skin, it affects the rest of the system only through the general debility which supervenes. Farcy is regarded by many veterinary physicians as curable. In fact, the very case from which the drawing we give was taken, is reported to have been permanently restored, by the judicious administration of tonic stimulants, with cantharides. But when the nose and lungs are affected, the case is hopeless and the horse should be shot, and buried at once. The appearance of the nose and the submaxillary lymphatic gland was so recently described in the *Agriculturist* that it is only necessary to say that the inner pink membrane on the middle wall between the nostrils, when affected by the glanders, becomes pale and sickly, sprinkled with small sores, and discharges a sizzly, gluey matter, very different from the whitish or watery mucus of a cold or catarrh. Cases of glandered and farcied horses are by no means rare in the country, and every owner of a good horse should be on his guard in putting him into strange stables, or with strange horses.



CASE OF FARCY.

Birds, Insects, and Fruit.

Fruit growing, in the abstract, is a charming pursuit, but practically it is beset by many perplexities. Not only is the cultivator disappointed by unfavorable seasons, but the insects destroy his foliage and the birds eat up his fruit. In a state of nature matters are better arranged, and we do not often find any one insect or bird sufficiently numerous to seriously injure our native plants. The small birds keep the insects in check, while the birds of prey prevent an undue increase of the fruit-eating birds,—bird, insect, and plant have a fair chance in the “struggle for existence,” and all goes on harmoniously. Civilization has destroyed this natural balance of things, and now fruit culture is in good part a fight with birds and insects. We have dropped a cog-wheel somewhere in the machinery, and it is running badly. This interference in the natural balance between the different departments of vegetable and animal life found a striking illustration a few years ago, in one of our large cities. New water works were built, and the reservoirs were carefully furnished with strainers to keep out the smallest fish, and no one was in danger of finding a minnow in the tea-pot. All went well for a while; but the water gradually acquired an unpleasant taste, and finally became intolerable. Science took up the microscope, and found the water full of animalcules, little oily fellows, which imparted the taste to the water. These in the absence of their natural enemies, the fish, had bred to an inordinate extent. The obvious cure was to let in the fish, and it proved effectual. The indiscriminate shooting of birds, formerly so common, allowed insects to get a fine start. The agricultural press, ours among the rest, joined in the cry “spare the birds.” The appeal had its effect; insects are much less destructive than they were a few years ago. But the birds will eat fruit as well as insects, and now the cultivator is in a dilemma to decide whether it is best to let the insects feast on the foliage of his vines and trees, and thus destroy his crop of fruit; or to allow the birds to check insect depredations and take the fruit for their pay for doing the work. The question comes up: are all birds the fruit-grower's friends, and if not, which shall be killed and which spared? The manner in which birds will dispose of strawberries, grapes, and other small fruits is something astonishing to one who has never seen it. In some places it is impossible to get a bunch of ripe grapes of any of the nicer kinds, for birds are excellent judges of quality in fruit. We are glad to see that the subject is attracting the attention of Horticultural Societies; at a recent meeting of the Alton, Ill., Society, a report and discussion upon birds formed a part of the proceedings. It is hoped that other pomological associations will discuss the matter in order that some general laws may be established. We give the conclusions of the Alton Society, which may serve as a basis for the action of others.

It was voted to destroy the Baltimore Oriole, Cherry Bird, Cat Bird, Jay Bird, Sap Sucker, and his kindred. The Robin was not placed in the list, though he received a very bad name and should take warning. Our own belief is, that he is about as bad as the rest. One gentleman stated that the Oriole had during the past season cost him 250 gallons of wine. The birds reported as not destructive to fruit, and to be fostered, were: Wren, Swallow, Martin, Black Bird, Meadow Lark, Pewee, Blue Bird, Chip, or Snow Bird, Red Bird, King Bird, Cuckoo,

Quail, Owl, Hawk, and Dove.—We notice also that the Massachusetts Horticultural Society has appointed a Committee to consider the case of the robin, and report upon his value, or otherwise, to the fruit grower.

Notes on Grapes and Grape Culture.

In our notes in December last, we alluded to the growing importance of grape culture; and believing it destined to be one of the leading branches of industry in this country, we shall continue to give, from time to time, such bits of information as we consider worthy of being recorded. The interest our readers take in the subject is shown by some 20 letters now before us. Frequently we are asked questions which have already been answered, and it is not always convenient to go over the same ground again. Every one who has only a few vines even, should have some work upon grape culture at hand for reference. We do not answer queries, no matter if marked private and confidential, as to where the best vines may be had. We believe that all who advertise with us intend to deal fairly, and we can not go beyond that. If one wishes to purchase many vines, it will pay him either to visit the nurseries and examine the stock, or to send for samples and order with the agreement that the vines sent shall average of equal quality with the sample. A nurseryman out West wishes us to enter into a combination with him to put down the high prices at which new varieties are sold. We cannot aid in any such undertaking. The thing will soon regulate itself. When a cultivator, after many years of careful trial, succeeds in obtaining a new and valuable variety, he must get his whole reward for his labor in a short time, as the plant soon passes out of his hands, and is propagated by many others. Those who do not wish to pay his prices, can afford to wait. From the southern States we begin to have correspondence and of course grape queries. There is still much to learn concerning the adaptation of varieties to localities, but the experience of Missouri and Tennessee cultivators shows that as a general thing grapes of northern origin are much improved when cultivated in more southern localities. The practice of high manuring is now abandoned in localities where grapes are grown for wine, a well drained soil of moderate fertility, giving much better fruit and a healthier growth of vine. We continue our notes from reports of correspondents and other sources.

Creveling.—A cultivator in Central New-York writes as follows:

“Four years' experience with this satisfies us that it is a very excellent grape. Excellent in some respects, though not in all. It ripens early, at the same time as Hartford Prolific and Northern Muscadine, and does not rattle from the stem as both of those sorts do. It is superior in quality to them and to the Concord, and resembles a good Isabella. But the clusters are too loose: sometimes not more than half of the berries set. Perhaps if some other early grape, blossoming at the same time, were planted by its side, its flowers would be fructified, and the clusters be handsomely filled out.”

Hartford Prolific.—A friend who grows grapes for market called on us to ask with what varieties he should extend his plantation. We inquired what kinds he had, and were told, Hartford Prolific and Concord, and both fruiting satisfactorily. Our advice was to plant more of the same sort, and also to try some of the Adirondac, Israella, and other of the newer

kinds to test their suitableness of his soil and location to them. Now while we are well aware that either of the last mentioned grapes is greatly superior to the Hartford, it would be unwise in our friend to abandon a variety he has tested, and plant largely of those with which he has had no experience. For a near market there is none of the early grapes more profitable than the Hartford, with all its faults, and though we hope to see it supplanted by better sorts, it will for some years be valued on account of its earliness and reliability.

Main's Seedling.—The Hon. E. W. Bull, with whom the Concord originated, shows pretty conclusively, in the Massachusetts Ploughman, that the grape which has been sold at a high price as ‘Main's Seedling,’ is nothing but the Concord. The same thing has also been called ‘Early Concord’ and ‘Northern Hamburg.’

Iona and Israella.—F. C. Brehm, an experienced grape cultivator at Waterloo, N. Y., reports to the Country Gentleman, his experience of last season. “Hartford Prolific, Iona, and Israella, stood it best out of the whole lot; ripening their fruit and wood finely. Israella will become a popular market grape, on account of its earliness, good quality, and excellent keeping qualities; it bears early and abundantly, with heavy shouldered bunches, very compact. They adhere very firmly to the peduncle, and will shrivel up or dry into raisins before they will dry or drop off; this makes them valuable for sending to market. Iona will undoubtedly be the favorite for the table and wine, as soon as its merits become known; it is no doubt a seedling of either the Diana or Catawba, probably the latter, which it much resembles in color and flavor, but is much superior to either of them; ripening about the same time as the Delaware.

Montgomery.—This variety has been put forward as a native. We are informed by the gentleman, after whom it is named, that he procured it of a German as a foreign grape, and that he never claimed for it any other origin. Although in favorable localities it will fruit in the open air, he wishes it to be understood that it is an imposition to pass it off as a native variety.

Some Choice Winter Pears.

A richly flavored melting pear on New Year's day is a luxury which is enjoyed by far too few. Most who raise fruit, content themselves with summer and autumn pears, while they might as well prolong the season into February and March. Our late varieties have multiplied largely within the last few years, and they include some of the highest excellence. Some who try them, fail from picking them too early and keeping them too warm. The consequence is, that when they come into eating, they are either flat and insipid, or are shriveled. Of the many specimens brought for our inspection this season, the majority had wilted before ripening because they had not been kept sufficiently cool. The fruit should be left on the tree as long as it receives any nourishment from it; a few light frosts will not injure it. It should, after being gathered, be kept as cool as may be without freezing, and be brought into the condition for eating, by placing it for a few days in a warm room. We append a few notes of those, which we have tested during December and January.

Lawrence.—This was figured and described in December, 1864. If we were confined to but one late variety, it should be the Lawrence. The tree is healthy, vigorous, and productive, and though there are varieties possessing a higher

flavor, the fruit is so generally good and the crop so regularly to be depended upon, that we are disposed to give it a high rank.

Dana's Hovey.—When this pear was first exhibited, it was so small that its lack of size seemed to detract from its good qualities, but as the trees grew older, the fruit became larger, and it is now of sufficient size for a table fruit. We have only seen specimens from Mr. Hovey, who states that the growth, habit and productiveness of the tree are all that can be desired. In quality the fruit is of the very best. It has a russet skin, is very juicy and of an exceedingly rich flavor. Last year it was in eating the middle of December. Mr. Hovey states that ordinarily it keeps until the end of January, and never rots at the core.

McLaughlin.—A fine, large, russety fruit, which originated in Maine, and is not much known out of New England. From the specimens we have seen we should consider it good, and worthy of the attention of cultivators.

Josephine de Malines.—The tree has not a very rapid growth, and it needs age before it will produce good fruit. When in perfection, it is one of the best, and will last until spring.

Winter Nellis.—This fine old variety should not be overlooked in making a selection of winter pears. All the specimens we have seen this year ripened early, but they were very fine.

Vicar of Winkfield.—This is the best of all cooking pears, and when well grown by good culture and proper thinning, is a better table pear than some with a higher reputation. In its best condition it is a very handsome fruit, and it is generally sure to bear a crop.

Besides these there are many old and new varieties, including Easter Beurre, Glout Morceau, Sieulle, Beurre D'Anjou, Belle Epine Dumas, and others. If winter pears have good culture and the same care in thinning, when needed, that is given to other varieties, we shall not hear so many complaints that the whole class are a failure. The prices that good specimens always bring in market, should be an inducement to fruit growers to give them a fair trial.

Newspaper and Popular Science.

Popular science is too apt to be popular error. It would be a good thing to have children taught the rudiments of the natural sciences as thoroughly as they are those of arithmetic; could we only have capable teachers and suitable text books. Of late what is called Object Teaching has been introduced into schools. The idea is a good one, but to properly carry it out calls for acquirements more varied than will usually be found among our college professors, and are not to be looked for among common school teachers as a class. The American Educational Monthly, not long ago published an "Object Lesson on Iron," in which children are taught that iron is "corrosive." The class being asked what steel is, answer; "The best kind of iron." Teacher.—"That is about correct; it is iron worked into a more perfect form. Can you describe the process?" Class.—"It is made hot and then put into cold water." And so on all through the article a profound ignorance is displayed of the nature of iron and the children are taught errors which they must in time unlearn. It is very unsafe business for those who know but little of any science to undertake to teach those who know less. One of our agricultural cotemporaries in a popular article on chemistry gives chloride of lime as an illustration of a binary compound. Chemically speaking there

can be no such thing as chloride of lime, and if the writer means the article popularly known by that name, he could not have chosen anything farther from a binary compound. When our literary papers affect the scientific, science gets the worst of it. The Home Journal of Dec. 9th last, had an article upon the potato which may have appeared learned to some, but which was a tissue of absurdities from beginning to end. To show up the errors of such an article as this would be labor misspent. Our daily papers have much to answer for in the way of false science, and their articles which treat on scientific matters are so amusing that we for the time forget that Vanity Fair and Mrs. Grundy are dead. The N. Y. Tribune of Dec. 6th, has an article giving "Anecdotes of the Microscope," which is so remarkable a production that we have cut it out and put it among our literary curiosities. It was probably written by one who never saw a microscope. The Tribune is, however, no worse in this respect than the other dailies and, they are all, as far as their treatment of scientific matter goes, melancholy illustrations that "a little learning is a dangerous thing."

Gardening in a Back Yard.

The *Agriculturist* commends itself to those who have small gardens, as well as to the owners of large farms, but we did not know that it was read by those operating on quite so small a scale as the writer of the following who sends his experience over the signature of "Rus in urbe." This queer name is, we suspect, a running together of *Rus* in *urbe*, the "Country in the City."

"The changes of this changing world found me in N. Y. City, on the cold first of May last taking possession of a city house. It had been engaged for me without my first inspecting it, and upon reaching my new possession, I neglected to look at parlor and dining room, but ran eagerly to the rear to survey the 'grounds.' Imagine how small the smallest kind of a city yard looked to one who had been accustomed to till his acres of garden. Here was all of mother earth that was left to me, scarcely a good sized burial lot. I resolved to make the best of it. When I was gardening on the large scale, I used to read in the *Agriculturist* of wonderful things in small plots of ground, and I recollected with sorrow, the contempt I felt for those potterers in small patches. Here was so much, or rather so little, land to be made the most of. It had already been laid out by a former occupant, a grass plot which two bed sheets would cover, and a border around three sides of the yard. I had 36 feet of border averaging 3 feet wide, and I borrowed a bit from one end of the grass plot to make a little bed 8 feet by 3. A stable at hand supplied manure, and the ground was put in a tolerable condition. Now for my planting. The fence with the warmest exposure was furnished with a trellis of wire and strings, and Lima beans, planted as well for ornament as for beans. Eighteen good Tomato plants were set out along the borders and supplied with trellises. Two egg-plants filled spare corners, while the bed I annexed from the grass plot was devoted to two hills of cucumbers. Then all along the edges of the borders and beds, parsley seed was sown. The results were first shown in a cucumber! Do you believe there was such another cucumber in New-York, and did I not on that day feel pity for those misguided persons who bought the wilted things at the corner grocery? Tomatoes came early, and plenty of

them, all that five persons could eat and quantities to can and pickle green. About a dozen egg-fruit, aldermanic in proportions, and delicious in flavor. Several pickings were made of Lima beans, and the parsley was always pretty to look at, and handy to have. 'And is this all?' some reader of large possessions will ask. No. All those nice things on the table were as nothing to the weeding, the pinching in of rampant cucumber vines, the tying up and cutting up of tomato vines, (how much cutting they do stand,) the fight with insects, the getting the hands dirty, the back tired, and being happy generally. I don't think I can ever have a smaller garden, but if it comes down to a single cubic foot in a candle box, I shall accept it and thankfully read the *Agriculturist* which tells me how to make it yield to the full extent of its capabilities."

Names of Plants and Fruits.

Our horticultural nomenclature is in sore need of revision, and we are glad to see that the subject is being agitated by so influential a paper as the London Gardeners' Chronicle. In a well conceived article in its issue of Dec. 9 last, it protests strongly against the practice, which is becoming too common, of the imposing of names for supposed new plants by those who have only a limited knowledge of botany. It says: "But we put it to all advocates of correct botanical nomenclature, who are not sufficiently educated themselves, whether it would not be more desirable to endeavor to have their plants scientifically and correctly named by qualified botanists than to send such plants out to the public, oftentimes not correctly named, or not unfrequently provided with names of questionable taste." To all of which we heartily say yes, and in turn ask the Chronicle if it would not help the end it desires, to stop calling one of our American trees *Wellingtonia*, which it constantly has done, and does in the very number from which we have quoted. The name *Wellingtonia* was given to it in a "questionable taste," the absurdity of which is only exceeded by that of *Washingtonia*, by which others have called it. But our objection to it is that it is not "correct botanical nomenclature." As our friends do not seem as well up in American botany as they should be, we refer them to Silliman's Journal, and the Pacific R. R. Reports, where they will find it shown that the so-called *Wellingtonia* was discovered, after the fruit became known, to belong to Endlicher's old genus *Sequoia*, and that the proper name is *Sequoia gigantea*. It may gratify national pride to attach a name honored in English history to this wonderful tree, but it should not be indulged at the expense of scientific accuracy. The Chronicle says, "There is some consolation in knowing that the time will soon come round when these so-called names which have been given to plants by unqualified persons, will be discarded for those which have been given by botanists." Though the name *Wellingtonia* was not given by an "unqualified person," it is in the category of those which "will disappear from a position they should never have occupied."

In January 1865 we had some remarks upon the nomenclature of fruits, especially upon the inconvenience which attends the designation of a fruit by a name of several words, such as the pear *Beurre gris d'Hiver Nouveau*. The French pomologists are responsible for most of this redundancy, and we are glad to see that a reform has commenced in the quarter where it was most needed. In the *Nouveau Jardinier* for



NATURE'S MUSICIANS. — Engraved for the American Agriculturist.

1865, the names of fruits have been much simplified, and instead of *Jalousie de Fontenay Vendee*, we have *Poire Fontenay*, or *Fontenay Pear*. The *Beurres* and *Doyennes* are all dropped where it can be done without creating confusion, and there is a general shortening up of titles. While we quite agree with the plan followed in this work, we do not advocate indiscriminate meddling with such matters, as it would lead to inextricable confusion. We hope for a general pomological congress which shall take action to simplify names and adopt rules for naming new varieties, that all pomologists will follow. According to accepted rules, the name by which a fruit is first described in a journal devoted to horticultural subjects, must be adopted.

Birds and Squirrels.

The companionship of these beautiful "children of the forest" about our rural homes is a constant source of pleasure, an educating influence upon ourselves and our children, not to be despised. Squirrels eat a good deal of corn, but rats eat more; some birds pluck the early cherries, but most prefer the insects that do vastly more damage. Squirrels and rats may agree pretty well on the same farm, but birds and insects do not. Both squirrels and birds will become very tame where they have security. Mr. Fuller, of grape and strawberry fame, told us a few days ago of the little pets which he shelters about his hospitable homestead.

Gray squirrels crack their nuts under his eaves, and quails and other birds find his domain a "city of refuge" from the gunners of the neighborhood. How quickly the birds will find out where they are safe! These cold days, a few handfuls of ready cracked nuts, which Mr. Fuller or his wife lay at the foot of the apple tree for their little furry friends, disappear wonderfully fast. Squirrels may be a nuisance sometimes, but there are really few families, in the country even, to which a pair or two of partly domesticated squirrels would not give great pleasure. What pleasanter music to wake up to, of an autumn morning, than the blythe tune of some thrush accompanied by the rattling crackle and chatter of such a pair of nut crackers.

A New Hybrid Pink—"Sarah Howard."

Last autumn we saw in the grounds of one of our florists, a new double white Pink, which was such a profuse bloomer as to readily attract attention. At our request he has given the following description, which we accompany with an engraving of a flowering branch which will show its general character, especially its great profusion of buds and flowers: "This valuable addition to our new plants was originated by A. G. Howard, Florist, of Utica, N. Y., an accurate and close observer in all matters pertaining to floriculture. It is somewhat of a nondescript—evidently a hybrid between a white China Pink, and white Monthly Carnation.—From seed sown in the green house last March, the plants began to bloom about middle of July, in the open border, and continued in wonderful profusion until October, when they were lifted and potted and placed in the greenhouse, and now (middle of December) are literally covered with buds and flowers. The flower is of the purest white, most symmetrical in form, and in the different varieties—for there are many—varying from 2 to 3 inches in diameter; out of 75 plants raised from seed, only two were single, a most unusual feature in Carnations or Pinks of any kind. As a white Pink for continuous summer or winter blooming, it will fill up a blank that has long existed. Mr. Howard informs me that it is quite hardy even at Utica, where the thermometer occasionally marks 20° below zero, or that when sown in January or struck from cuttings it will bloom continuously from July throughout the season, which was well borne out by my experience of it last summer. It seeds freely even from double flowers, roots as quickly from slips as a Fuchsia or Geranium, and is a robust though compact grower. There is little doubt but that it can be easily hybridized by colored varieties of the monthly Carnation, when we may expect a rich treat by the opening up of a new class in this most beautiful tribe."

How, When and Where to Sow Seeds.

[The following article is by Mr. Peter Henderson, of the firm of Henderson & Fleming, of this city, well known seed dealers. It must not, however, be regarded as a seedman's plea, for Mr. H. has been and still is a market gardener and florist on an extensive scale, and gives here the results of long practice. Mr. H. has intimated his intention to give us other articles relating to market gardening, a subject upon which his experience has well qualified him to treat.]

As the season of seed sowing is again approaching, permit me to lay before your read-

ers a few of the conditions necessary for the germination of the different varieties of seeds.

The great want of knowledge in this matter is too often the cause of much undeserved censure upon the seedsman, for in nine cases out of ten the failure is not with the seeds,

ginning to rot. It is now plain to him that he has been cheated; he has been sold old seed, and if he does nothing worse, he for ever after looks upon the seedsman he has patronized as a venal wretch, destitute of principle and honesty. But he must have tomatoes, peppers,

and egg plants, and he buys again, from another seedsman, warranted honest. He renews his hot-bed, it is now a month later, and a bright March sun, with milder nights, gives him the proper temperature in his hot-bed—70 or 80 degrees, and his eyes are at last gladdened by the sprouting of the troublesome seed. April comes with warm sunshine inviting him to begin to "make garden" outside. He has yet the balance of his original lot of seeds that he bought in February. But as he is still entirely befogged about the cause of his failure in the first hot-bed, he begins his open ground operations with little confidence in his seeds, but as he has got them they may as well be tried. And again he sows in the same day his peas and Lima beans, radishes and pumpkins, onions and sweet corn. Hardy and tender get the same treatment. The result must of necessity be the same as it was in the hot-bed, the hardy seeds duly vegetate, while the tender are rotted of course. This time he is not surprised for he is already convinced that seedsman No. 1 is a rascal and only wonders how any of his seeds grew at all, so he again orders from seedsman No. 2 for the articles that have failed. Here circumstances continue to favor the latter, for by this time the season has advanced in its temperature and the seeds duly vegetate. Every farmer knows that, in this latitude, he can sow oats or wheat in March and April, but that if he sows his corn or pumpkins at the same time, they will perish; this he knows, but he may not know that what is true of the crops of the farm, is equally true of the garden. Hence

the importance of a knowledge of the season when to sow vegetable seeds or set out plants.

The temperature best fitted for the germination of seeds of the flowering kinds will be best understood by the tabular form given below.

Vegetable seeds that may be sown in this latitude from the middle of March to the end of April. Thermometer in the shade averaging 45°.		Vegetable seeds that may be sown in the open ground in this latitude from the middle of May to the middle of June. Thermometer in the shade averaging 60°.	
Beet.	Lettuce.	Lima Beans.	Water Melon.
Carrot.	Parsley.	Bush "Squash.	
Cress.	Parsnip.	Cranberry	Pumpkin.
Celery.	Onions.	pole Beans.	Tomato.
Cabbage.	Peas.	Scarlet runner Beans.	Nasturtium.
Cauliflower.	Radish.	ner Beans.	Okra.
Endive.	Turnip.	Sweet Corn.	Cucumber.
Kale.	Spinach.	Musk Melon.	

Flower seeds of all kinds had better not be sown before the middle of May. There may be a few exceptions but they are hardly of importance enough to be mentioned here. It will



NEW HYBRID PINK, "SARAH HOWARD."

but results from the time or manner of planting. When the owner of a garden sends his list of seeds to the seedsman, it is generally a complete list of all he wants for the season. They are received and the interesting operation of sowing is begun. First in a hot-bed, if he has one, often as early as the first week in February, (a month too soon by the way,) and in go indiscriminately, at the same date, and under the same sash, his seeds of cabbage, cauliflower, lettuce, and egg plant, peppers and tomatoes. Yet even in the waning heat of this early hot-bed, where a thermometer would possibly not indicate more than fifty degrees, he finds in a week or so his cabbage, lettuce, and cauliflower "coming through," nicely, but as yet no egg plants, pepper, or tomatoes. He impatiently waits another week,—makes an examination and discovers that instead of his tomatoes and egg plants beginning to vegetate, they are be-

be understood that these dates refer only to the latitude of New York, farther South operations may be begun earlier,—farther North later. So much for the time of sowing; I will now refer to suitable soil and the manner of sowing.

The Choice of Soil, when choice can be made, is of great importance, the best being a light soil, composed of leaf mould, sand and loam; the next substitute for leaf mould being well decayed stable manure, or better yet, decayed refuse hops from the breweries, in short, anything of this nature that will tend to lighten the soil, the point to be avoided being a *weight* of soil, either from the nature or quantity of it. The nature of the soil is not of so much importance for the germinating of large vigorous seeds, as peas, beets, beans, corn, etc. But with the delicate, slow sprouting sorts, as celery, parsnip, egg plant or pepper, it is of much importance. Seeds of nearly every garden vegetable should be sown in rows in width, of course, according to the variety, and of depth proportioned to the size. Very little better information can be given in this matter than the old rule of covering the seed with about its thickness of soil, but this should always be followed up by having the soil pressed closely down. In our market gardens here, we invariably have the ground rolled after sowing, or in frames or hot-beds where the roller cannot be used, after sowing we pat the soil evenly down with a spade. This may not be of so much consequence in early spring, when the atmosphere is moist; but as the season advances, it is of great importance. I have seen many acres of carrots and parsnips lost for want of this simple attention; the covering of the seeds being loose, the heated air penetrates through, drying the seeds to shriveling, so that they never can vegetate. Your farmer readers, no doubt, have had plenty of similar experiences with turnips, where they have been sown broadcast without rolling. Another advantage in rolling after seed sowing is, that it leaves the surface smooth and level, thereby lessening greatly the labor of hoeing.

Sowing in Hot-beds.—It would lengthen this paper too much to give extended directions for sowing seeds in hot-beds. I will briefly say, that after the hot-bed has been formed—say by the first week in March, let soil of the kind recommended be placed on it six inches deep, into which plunge a thermometer three or four inches, and when the temperature *recedes* to 75° or 80°, you may then sow, giving air in mild weather as soon as the seeds begin to vegetate, covering up warmly at night by mats, straw or hay. But many of the readers of the *Agriculturist* never saw a hot-bed, and are perhaps never likely to have one; to such I would say that there is an excellent substitute on hand in most dwellings, in the kitchen or basement windows facing South or East, inside of which is a temperature usually not far from that required for the vegetation of seeds, and where plants from seeds of the early vegetables, or tender plants for the flower border may be raised nearly as well and with far less attention than in a hot-bed. Instead of hot-beds we use our green-houses for the purpose, using shallow boxes in which we sow the seed; these are made from the common soap box cut in three pieces, the top and bottom forming two, and the middle piece, bottomed, making the third; these form cheap, convenient boxes. Fill these nearly full with the soil recommended, and after sowing, press nicely down level, and make the surface soil moderately firm; keep moist, in a temperature in the window of from 60° to 70°,

and your little trouble will soon be rewarded.

In this way seeds should be sown thickly, and after they have made the first rough leaf, should be again planted out into the same kind of box, from one to four inches apart, according to the kind, and placed in the window to receive similar treatment as the seeds, but as the season advances, in mild days they should be set out of doors, care being taken that they are taken in at night, and that the soil in the boxes is never allowed to get dry. And here let me endorse in full the advice given to your readers in the last number against the use of pots in sowing seeds. I know it is usually the first thing the novice in gardening does if he gets any choice seed or favorite cutting; he has some how got the belief that there is some hidden virtue in a flower pot, and he accordingly sows his seed or plants his cutting therein, but in nine cases out of ten they are destroyed, or partially so, by the continued drying of the soil in the porous flower pot. If early in the season, let delicate seeds be sown in the kitchen or sitting room window, in the boxes as recommended, or if late, in the open border; but delicate seeds should never be sown in pots, as even in experienced hands they are much more troublesome and uncertain.

Degeneration of Plants—Wild Oats.

A remarkable instance of the alleged degeneration of a useful grain into a troublesome weed, has been brought to our notice by Solon Robinson, Esq., who placed in our hands a letter containing a specimen for identification from Mr. D. G. Pickett, Winnebago Co., Wis. The letter states that a farmer in Mr. P.'s neighborhood, threshed his oats in the field and burned the straw, but a rain extinguished the fire before the heap was all burned, and the partially consumed straw was spread upon the ground and plowed in. The oat crop was followed by one of spring wheat. In the spring, the plant in question made its first appearance on the ground where the straw was partially burned, and was plentifully mixed with the wheat. Since then it has spread from this field to the farms in the neighborhood, and proves a very annoying weed. So much for the history of its first appearance, which we have condensed from a very detailed and clearly written account. We recognized the plant as the Wild Oat, so celebrated in all accounts of the vegetation of California, where it takes almost entire possession of large tracts of country and affords a valuable spring pasturage. This oat, which is also found abundantly in the grain growing countries of Europe, was formerly considered a distinct species by botanists, and was called *Avena fatua*, while the cultivated oat was regarded as equally distinct and called *Avena sativa*. Recently, however, European botanists of high authority have concluded that the cultivated oat was not a species, but only an improved variety of the Wild Oat, *Avena fatua*, as it had been found to degenerate into the wild state. This Wild Oat has not before, to our knowledge, been found east of the Rocky Mountains, and we must attribute its occurrence in the locality described by Mr. Pickett, either to a degeneration of the loose oats in the straw, or to the seed having been introduced with the seed wheat. The character of the seed of the Wild Oat is such, that we cannot conceive how it could have been sown in any considerable quantity with the wheat without attracting the attention of the sower. The grain of the wild oat is surrounded by a chaff, which is clothed with conspicuous

brownish hairs, and bears upon its back a stout twisted awn or bristle. Figure 2 shows a spikelet of the natural size, and a grain enclosed in its hairy and bristle bearing chaff is given in fig. 1 of double size. We are disposed to accept the account of its origin given above as the probable one, and it would be interesting to know how much the heat to which the grains were exposed in the partial burning of the straw had to do with the sudden reversion of a cultivated variety to its wild state. We have heard of other instances in which seeds have been subjected to unusual heat, but not sufficient to destroy their vitality, and the product from these, when sown, was of a decidedly inferior character. Our friends, who believe in the transmutation of wheat into chess, will, no doubt, seize upon the above as corroborative of their views. They should bear in mind that the plant, which we admit may have changed, remains still an oat, and does not jump at once into a widely different genus. Indeed, it assumes no greater difference than we are accustomed to produce in plants by careful culture and selection. This case is only a sudden throwing off of the habits of civilization and reverting to the state of barbarism. As the occurrence of the wild oat is much to be regretted, care should be taken to prevent its spreading. Unfortunately, the foliage is not to be distinguished from that of the common oat, but in flower the panicle is usually more loose, and the character of the chaff above given will enable it to be readily recognized. The plant being an annual one, if the already infested fields should be put into pasture it would no doubt soon disappear.



Fig. 1. Fig. 2.

Cheap Statuary.

"Friend Brown is very fond of gardens and rural adornment generally. He has pleasant grounds of about three acres in extent, more than half of which are devoted to ornamental purposes. Nothing can be finer than the grass of his lawns, which is kept short and smooth by the scythe and roller. His summer house is a model of beauty, standing upon a knoll overlooking the surrounding country. His fondness for embellishment has led him to procure a sun-dial and several classical vases, which are distributed about the grounds. These vases are of cast-iron, painted in imitation of marble.

"He had progressed thus far in his rural adornments when the rebellion broke out, and then the extremely high price of iron ornamental work put a stop to his improvements, for his purse has narrow limits. He had begun to plan for the introduction of a few pieces of iron statuary into his grounds, but, alas! the cost. A figure of the goddess "Flora," which, before the war, would have cost only \$45, now costs \$100. So, not to be wholly cheated of his enjoyment, he went to the city and engaged an Italian worker in plaster casts, to make him a few, about two thirds the size of life, of classical figures appropriate to the garden. They were statues of "Spring," "Summer," and "Flora," and, at a few feet off, they could not be distinguished from marble. These were placed on

pedestals, painted and sanded to imitate freestone. The statues themselves were painted white, to protect them against the weather. These were carried into an upper loft of his carriage-house in winter, from which they emerged every spring to do duty. They have now served for three years, and bid fair to last at least three years more, by which time Mr. Brown hopes to be able to substitute for them something more substantial. Now, though I do not believe in shams, I must highly commend the course of our friend. It would have delighted him to set up marble statues, if he only could, but as it was a case of necessity, he submitted to plaster. He partially gratified his own artistic tastes, it was a beautiful ornament to his grounds, and it promoted an elevated taste in the community."

[The above comes to us from a correspondent, and we give it place for an entirely different purpose from which it was written. It serves to show exactly what to avoid. A show of painted plaster casts upon make-believe stone pedestals, instead of promoting an "elevated taste in the community," but fosters that taste which leads to the building of wooden Corinthian columns to church porticoes, putting dummy clock-faces on the steeples, cheap jewelry, and a hundred other instances of false appearances, to be found in every community. There are but few places that will bear statuary of any kind, and whoever has such grounds, can afford the real thing. Even this is sometimes used offensively; we know of one place in which statuary and "bustuary" are put about the lawn in such profusion, as to suggest the idea that the owner had retired from the marble business, and had thus made use of the stock which remained on hand. Not only do they fill the lawns, but they run over into the vegetable garden, where they look as much out of place as a pig in a parlor. One classical figure keeps watch over the cabbage patch, and another—probably "Niobe, all tears,"—does a like service for the onion bed, and so on. The "sun dial and several classical vases" of cast iron, alluded to above, are well, but painted plaster casts are very bad.—Eds.]

Seeds for the Kitchen Garden.

Having sometimes published early in the year a select list of seeds of garden vegetables, our letters indicate that it is looked for as a regular thing. It is indeed a matter of the first importance to get the best of each variety. There is as much difference in the quality of vegetables as of fruit, and it takes no more time and care in cultivation to raise a really good variety, than it does an indifferent or poor one. To those who don't care to improve, or who are too lazy to be at a little trouble in this matter, we have nothing to say; they may raise their mongrel squashes and flabby cabbages, while others enjoy delicious Hubbards and Early Wakefields. If it were generally understood, that every one within reach of a Post-Office has as ready access to the best seedsmen, as if he lived in the same town with them, we think there would be a great improvement in the character of the vegetables raised throughout the country. The expense of getting a stock of good seeds is but little, compared with the results. The chief thing is the trouble and forethought. February is the month in which dealers have their catalogues and stocks ready, and we give notice timely and seasonably. Look over our advertisements and send to any dealer that may be preferred, for a catalogue. When the catalogue comes to hand, make a selection and

order the needed supplies at once, before the press of business is upon the seedsmen. "Make a selection," exclaims the reader. "How can I? here are 25 peas, 20 squashes, a dozen radishes and so on, and I don't know one from the other." The object of the following list is to relieve this trouble. The catalogues contain besides all the older and proven sorts, many new kinds, which have not been thoroughly tested, and many which have distinctive names without the plant they represent having any claims to be thus honored. In the enumeration below we give varieties that we know to be good of their kind, and those that, all things considered, we deem suitable for general culture; though there may be others quite as good, we prefer to keep the list for general culture small. Professional gardeners and amateurs can afford to try new and fancy sorts, and this list is not intended for them.

BEANS.—**DWARF OR BUSH**: Early Valentine, for string or snaps, quite early and productive, pods remain green a long time; Newington Wonder, excellent when green and the small drab seeds are valued for soup; Refugee, rather late, but prolific, and the best for pickling and salting; Dwarf Horticultural, for early shelling. —**POLE BEANS**: Large Lima, in warm locations; Small Lima, north of New York.

BEETS.—Early Blood Turnip, an improved variety is called Early Short Top; Long Blood, for main crop; Swiss Chard, fine for greens only.

CABBAGE.—Early Wakefield, and Early Ox-Heart, large and early; Little Pixie, a new early sort; Winningstadt, medium early, large, very hard heads and best for a light soil; Flat Dutch, for Winter; Red Dutch, for pickling; Marble-head Drumhead, very large; Green Globe Savoy, small, late, the richest of cabbages.

CARROTS.—Early Horn, for early table use; Long Orange, for main crop.

CAULIFLOWER.—Early Erfurt, a dwarf variety with large and compact heads; Early Paris; Thorburn's Nonpareil, very fine.

CELERY.—White Solid; Dwarf White.

CORN.—Dwarf Sugar, small ears, for early use; Stowell's Evergreen, larger, for late use.

CUCUMBERS.—White Spined, best for table; Long Green, late, for pickles.

EGG PLANT.—Long Purple, early; New York Purple, later, large and best.

ENDIVE.—Green Curled, for late salads.

KALE.—Green Curled Scotch, winter and spring greens.

KOHL-RABI ("Turnip Cabbage"); Early White.

LEEK.—Large Flag, for soups.

LETTUCE.—Curled Silesian, a variety of which called Early Simpson is much grown here for market; Butter, superior; Victoria Cabbage.

MUSKMELON.—Fine Nutmeg; Jenny Lind, very early; Skillman's Netted; White Japan.

WATERMELON.—Mountain Sprout, productive and early; Ice Cream, very fine; Black Spanish, fine but only where the season is long.

ONION.—Large Red Wethersfield; Large Oval Red; White Portugal; Yellow Danvers.

PARSLEY.—Extra Curled.

PARSNIPS.—Hollow Crowned; the Student.

PEAS.—Daniel O'Rourke, early and fine, 2½ feet; Maclean's Advancer; Tom Thumb, productive, 8 to 10 inches; Mclean's Princess Royal, 1½ foot; Dwarf Blue Imperial, 2½ feet; Champion of England, for main crop, 5 feet; White Marrow-fat, later and fine, 5 feet. Many new sorts are introduced each season, but they need trial here.

POTATOES.—Early Goodrich, productive and

good; Early Cottage, is well recommended; Early Dykeman, much grown around New York.

RADISHES.—Early Scarlet Turnip; Long Scarlet Short Top; Scarlet Chinese Winter, good and keeps as well as a turnip.

SALSIFY or Vegetable Oyster, very good.

SPINACH.—Round Leaved, for early; Prickly, for wintering over.

SQUASHES.—Summer Crookneck, best early; Yokohama, fine, early and late; Boston Marrow; Turban, excellent, autumn and winter; Hubbard, best for late keeping.

TOMATOES.—Early Smooth Red; Fejee, later, fine and productive; Pear Shaped, for preserves.

TURNSIPS.—Early Dutch, very early; Red Top Strapleaf, spring and fall; Rutabaga, to keep.

WINTER CHERRY.—For sauce and preserves.

Besides these, will be needed Peppers, Sage, Summer Savory, Sweet Marjoram, Thyme, and other "sweet herbs."

Renovating Old Orchards.

There are multitudes of old orchards throughout the country, too good to cut down, yet bearing fruit only fit for making into cider, or feeding to swine. Their owners frequently and earnestly ask: What shall we do with them?

First: if the fruit is poor, change it by engrafting. It is often the case that pruning should go along with grafting. The tops of the trees which have become thick and matted together, should be thinned out. But in pruning, let no one mount the trees rough shod, and with axe and saw hack away at the lower limbs and those in the interior. Instead of this, thin out the old, decayed limbs, cut out a few of the upper limbs as well as the lower, and try to preserve the symmetry of the tree. In grafting, begin at the top and renew about one-third of the tree each year.

The ground will need renovating, also, by plowing and manuring. The work should be done carefully, without barking the trees or breaking their roots. But so much harm is often done to the roots, we think it best ordinarily to merely scarify the surface with a harrow, and to give it a good top-dressing of barnyard manure, composted with muck, lime, and wood ashes. When the trunks and limbs have become mossy, and so rough as to harbor insects or their eggs, scrape them, and then wash them with weak lye or strong soap suds. A common whitewash brush will answer for applying this mixture.

A Selection of Plums.

Plums can be raised in spite of the curculio, provided one will take the necessary trouble, and whoever sets out trees without the determination to give them all needed care, will find that disappointment is his only harvest. The trees must be jarred early every morning, and the curculio caught on a sheet and killed. The following is Mr. Barry's selection, which comprises most of the best sorts:

For Table.—Imperial Gage, green; Jefferson, yellow with red cheek; Lawrence's Favorite, greenish; Smith's Orleans, reddish purple; Purple Favorite, brownish purple; Purple Gage, violet purple; Coe's Golden Drop, light yellow.

For Market.—Frost Gage, purple; Yellow and Red Magnum Bonum; Washington, green.

For Drying.—Fellenberg; German Prune; Prune d'Anjou; St. Martin's Quetsche.

The Shell Flower.— (*Phaseolus Caracalla*.)

Our readers are aware that we are fond of old-fashioned plants and have endeavored to keep some of the old border favorites from being forgotten. We now give them an illustration of a green-house vine, so old and so completely crowded aside by later comers, that it has all the rarity of a new thing. The plant is *Phaseolus Caracalla*, which was introduced into England from the East Indies as long ago as 1690. The genus *Phaseolus* is the one to which our varieties of the garden bean belong, and which also includes the Scarlet Runner and other species that are grown for ornament. The present one is a strong climber, with the large compound leaves of three leaflets common to the genus. Its flowers are borne in large clusters and appear in their curiously coiled shape, as well as their texture, so like some kind of shell, that there was no trouble in giving it a common name. The specific name *Caracalla*, is one by which it is called by the Portuguese, and means a hood for the head. Though the flower does not at first sight appear much like that of the bean, yet when the two are compared, it will be seen to have all the parts that the bean flower has, only much larger, and all having a strong spiral twist. The color is white, shaded with lilac, and the flower is one not only singular in appearance, but of great beauty, to which is added a charming perfume. It is grown as a green-house plant, and we do not know of any attempt to cultivate it in the open air. The plant from which our specimen came, had its roots under glass, but the branches ran outside of the house. It flourishes in the open air in the South of France, and would probably do so in some of our Southern States.

The Mountain Laurel.—(*Kalmia latifolia*.)

Last summer we visited the ground of an enthusiastic lover of plants and saw many interesting things that he had recently imported from Europe. When we had seen most of his novelties, with the air of one who saves the best wine till the end of the feast, he took us behind a screen of evergreens and with much satisfaction said, "look there!" We did look and



THE SHELL FLOWER.—(*Phaseolus Caracalla*.)

saw several very thrifty plants of laurel, which under the name of *Kalmia*, had come all the way from England, and were so evidently the

separates in plates; the young growth of a bright green. The shape of the shining green leaves is shown in the drawing; these differ somewhat in size according to the vigor of the plant. The flowers appear in May and June, and are produced in the greatest profusion, in clusters often much larger than the one represented in the engraving. The flowers vary in color from nearly pure white, to rose color, and the appearance of the shrub in flower has in some localities given it the name of Calico-bush. The buds are very symmetrical and pleasing in form, being marked by ten regular projections. The peculiar arrangement of the stamens mentioned, when describing the Sheep-laurel in August last, is much more readily observed in this species, as the parts are much larger. The ten projections seen upon the bud, are found, when the flower opens, to be caused by a corresponding number of depressions of the corolla. In each of these is caught an anther which being held in this position bends the stamen over like a bow; a slight touch liberates the anther and the stamen springs up toward the pistil with considerable force. The fruit is a small, nearly globular, 5-celled dry capsule, containing many minute seeds. The wood is very hard and may be used for turning small articles. It is said that the Indians used it for



MOUNTAIN- OR BROAD-LEAVED LAUREL.—(*Kalmia latifolia*.)

carving spoons and other utensils; hence the name Spoon-wood, sometimes applied to it. The stems are a favorite material for use in the construction of rustic chairs and other similar work. The leaves are said to be equally poisonous with the Sheep-laurel, to cattle and sheep. We have before alluded to the fact that our native shrubs when found in the nurseries are usually imported plants. A considerable quantity of this rather common one is annually imported. We have seen no successful transplanting of large specimens from their native localities, but have known those of moderate size to do well when thus removed. Select plants from open places in preference to those growing in the woods, in early spring take them up with a ball, and set them in better soil than that from which they are taken. A light, moist soil, with a plenty of vegetable matter suits them best; we have succeeded in a very sandy soil, with which a good share of well weathered muck was incorporated. The plants need a partial shade either from trees or buildings. In nurseries the Laurel is raised both from seeds and by cuttings. Seeds are sown in sandy peat in a close frame, the young plants potted when large enough, and kept in the close air of a frame until well established, when they are very gradually exposed to free air. Cuttings of the young wood are placed in pots of similar soil and kept covered with a bell glass, in the shade, until they take root. This beautiful genus commemorates the name of Peter Kalm, a Swedish botanist who visited this country about the middle of the last century, while its specific name, *latifolia* designates that it is broad-leaved. The narrow-leaved species, *Kalmia angustifolia* was illustrated and described in August last.

The New "Foliage Plant." (*Achyranthes Verschaffeltii*.)

The value of plants with strongly marked or colored foliage, for decorative purposes, is well established, and every addition to their number is regarded with interest. By the judicious use of these, brilliant effects may be produced, and as they are more permanent, they are often more satisfactory for certain uses than are flowers. The latest novelty in this line is *Achyranthes Verschaffeltii*, of which we have seen glowing accounts in the European journals, and now have the satisfaction of figuring it from a specimen sent us by Mr. G. Marc, of Astoria, L. I., who was the first to bring it to this country. The plant is from one to two feet high, branching freely, and with a natural tendency to assume a globular shape. The leaves are of the form shown in the engraving, but our drawing was taken from a young specimen, and does not show them as large as they are upon the older plants; they are entirely smooth, as is the stem with the exception of a ring of hairs at each joint. As far as the form of the several parts goes, we have no difficulty in giving our readers a correct idea of the plant, but what shall we do for color, the quality upon which its whole value depends? We can only ask them to im-



NEW FOLIAGE PLANT—ACHYRANTHES VERSCHAFFELTII.

agine all the light portions of the drawing to be of a lively carmine color, and the shaded portions, blackish red or maroon. There is no green about the plant, but the stem, branches and leaf-stalks are all of a beautiful carmine, while the leaves are very dark with strongly marked carmine veins, which give the whole a very lively appearance. It is said to stand extremes of



INDIA RUBBER—(*Siphonia elastica*.)

wet and dry with ease, and to be less sensitive

to frost than Coleus. We hope that the plant will do as well in this country as it has done in Europe, and have no doubt that it will in that case become exceedingly popular. This *Achyranthes* is from the River Plata, and is also a native of Peru. It unfortunately has already two names, the one we have given it above, which is that under which it was first distributed; and *Iresine Herbstitii*, a name it has in some of the English journals. Which name is the true one can only be determined from the structure of the flowers and fruit, which it has not produced in Europe, though it probably will be induced to flower in our warm summers. As there is a question about the name, we use the one by which the plant is known to our florists, without committing ourselves to its correctness.

HOUSEHOLD.

About India Rubber.

Forty years ago, India* rubber was merely known as a curious body, the only use of which was to erase pencil-marks from paper. Now we should hardly know how to do without it, in so many forms does its utility manifest itself. It serves for ear springs and coat buttons; it covers our feet in water proof and smooths our hair with the best of combs. It is elastic where elasticity is required, and firm when we wish firmness. But this is not telling what India rubber is. Several trees have a milky juice, which, upon drying, leaves the peculiar substance we know as India rubber. As it was first obtained from a tree of the East Indies—*Ficus elastica*, often grown in green-houses—it received its appellation of India or Indian, though the great supply of commerce comes from South America. The tree which furnishes most of it, is called *Siphonia elastica*, a twig of which is shown in the engraving below. This tree belongs to the Spurge Family, of which we have some minor representatives as weeds, which also produce a milky juice.

The *Siphonia* abounds in the Brazilian forests, and it is not likely that the supply will fail. The collectors of the product, cut holes in the trunk, and place vessels beneath to receive the juice as it runs out. The fresh juice appears quite like milk, and if bottled and carefully corked as soon as it is collected, it may be kept for a long time unchanged. It is sometimes imported in bottles as a curiosity, and for chemical investigation, but the mass of that which we obtain has been through a rude process of manufacture. It comes in large flat masses, and in bottles, as they are termed; these are globular vessels of various sizes and thicknesses, made by fixing a ball of clay upon the end of a stick, dipping the clay in the milk and drying the coating thus formed, over a fire. When one coating is dry, the dipping and drying are repeated, and thus a bottle of any required thickness is obtained. Then the clay mould is broken and the fragments are shaken out at the neck, which is of course where the stick joined the mould. The imported shoes which were formerly so much worn, were made in a similar manner upon clay lasts. Though naturally adapted to many uses, the difficulty of working it, together with the readiness with which it is hardened by cold and softened by heat, rendered it unavailable for many of the purposes for which we now employ it. The remarkable discovery of the "Vulcanizing" processes was mainly due to our countryman, Goodyear. They consist essentially in combining the rubber with sulphur and exposing it

to heat, and have the effect of rendering it insensible to changes of temperature within all reasonable limits, and allowing it to be worked with great facility. Another process produces the hard or bone rubber, which is now much used to make articles for which bone, horn, ivory and glass were formerly employed. India rubber is often called Caoutchouc (pronounced Ko-chook), a name of Indian origin; and also gum-elastic, a term in part descriptive of one of its most striking properties; though it exudes from a tree, it is not a gum in the proper meaning of the word, but a peculiar substance.



Fig. 1.—SIRLOIN ROASTING PIECE.

How to Carve Roast Beef.

There is probably no meat which is so much changed in quality, not to say flavor, by the manner of carving, as Roast Beef. The choice roasting pieces, according to our American notions, are cut from the Sirloin. Englishmen prefer for their national dish a cut from the fore-quarter, just back of the shoulder blade, called by the butchers the "middle rib roasting piece," in which all the meat lies upon the outside of the ribs. The Sirloin roasting pieces contain portions of the powerful muscles of the loin upon the top of the ribs, and of the tenderloin which lies beneath them and close to the backbone. All parts are well interlarded and coated with fat, of a very delicate quality. The quantity of tenderloin is less than that of the other meat, but the proportion increases as we approach the "flat bone." This portion is usually cut up into what are called in New-York Porter-house steaks. For real juiciness and high flavor no good judge of beef prefers the tenderloin, but there are many who do on account of its tenderness.

When the beef comes to the table, the tenderloin may be easily removed by turning the joint a little to one side, and passing the knife close to the ribs over the tenderloin, which, being drawn out, may be sliced lengthwise or crosswise, as the carver prefers. This is the only part of the beef not seriously injured by cutting it in the same direction with the fiber, that is, lengthwise.

Roast beef should be done through, so that no soft purplish red spot can be found when it is carved, but it should be so slowly roasted, thor-

color, the clear, almost scarlet red of the beef shall be disclosed by the knife close to the surface. So roasted, the beef is tender, juicy and toothsome as possible. The joint should be taken from the spit or bake pan and placed, after any little trimming it may need, upon the previously warmed platter, and sent directly upon the table. Not a drop of the drippings should be poured over it, but they should (if sent to the table at all) be thickened, made into a rich gravy, and served in a gravy boat.

The carver needs a sharp-pointed knife with a keen edge extending quite to the point, otherwise he will find difficulty in cutting thin slices, and in separating them from the attachment near the backbone. He begins to cut at one end, cutting in the direction the ribs run, which is exactly across the grain of the meat, removing as thin slices as he conveniently can. If the knife is sharp, it will not press out much of the juice of the meat, but if dull, the carver will be obliged to lay out the more strength, which will not only necessitate the cutting of thicker slices, but will squeeze out much "red gravy," and leave the pieces thick and ragged. The red gravy will flow freely enough at any rate, if the meat is rightly cooked, and a portion of it should be served to each guest, a spoonful or two being poured over the slice of beef when placed upon the plate.

When beef is cooked so that the juices will not follow the knife freely, it is nearly spoiled for us, unless we can get an outside piece to which the juices have been drawn during the roasting, and have dried there, rendering it, if not over-done, very rich and high flavored.

Each guest should have, unless preferences be otherwise expressed, a slice of rare meat, with a portion of the fatter and usually better done part toward the flank, with a piece of tenderloin, and, as already said, a spoonful of gravy from the dish, which, for this reason, ought to contain no drippings whatever. This red gravy, which is the very essence of the beef, will not flow from any parts not thoroughly cooked, nor from those over-cooked, and it is greatly enjoyed by many who can not eat or digest grease or greasy gravy in any form.

For any one who appreciates this quality of juiciness in roast beef, on which we dwell so much, it is enough to know that when the beef is cut with the fiber, it exhibits very little of it. The juice remains in the fiber, and, strange enough, even mastication does not seem to develop it. The beef is a different article. The thorough enjoyment of food is promotive of health and good feeling. Those who neglect their food, or who eat for the sake merely of filling their stomachs with something, lose much real pleasure, and usually have finally bad digestion and consequent poor health.

Borden's Condensed Beef.—Mr. Gail Borden, who perfected the process for condensing milk, has for a long time been at work upon condensing beef. He has associated with him Mr. J.

H. Currie, a well known manufacturing chemist, and S. L. Goodale, Esq., for a long time Secretary of the Maine State Board of Agriculture. Their establishment is at Elgin, Ill., where they procure the best fresh beef and prepare an extract with the greatest care. It is put up in packages of 2 ounces, each cake representing $2\frac{1}{2}$ pounds of beef. A sample was referred to "the Bachelor," who has not of late appeared in our Household Department, and he reports as follows: "Gail Borden should be called the 'Great Condenser.' He evidently has designs upon the bovine race, as he began by squeezing a quart of milk into the smallest possible compass, and now he has brought the old cow herself to terms. Two and a half pounds of beef are condensed to the size of, and appear and feel

very much like a stationer's cake of Indian rubber! We used, in war times, to laugh at the tale told

of the Richmond people, who went to market with their money in the market basket, and brought their meat home in the pocket book. This would have been possible had Gail Borden been on the other side of the line. But he was on this side, and thousands of soldiers have blessed him for his condensed milk, and now thousands of others shall bless him for beef tea. Were you ever sick away from home, and needing beef tea? The demand was answered by a dubious liquid, upon which floated a covering of melted tallow. With Borden's condensed meat, beef tea becomes possible even in a country tavern, the worst place in which a man was ever sick. Slice off a little from the cake, dissolve in a cup of boiling water, salt and otherwise season, and you have a clear, greaseless liquid with the full flavor of the richest beef. But few persons know what a restorer beef tea is after great fatigue. Some years ago one of the Diplomatic corps in Washington did a sensible thing, and at the same time made an innovation upon established customs, by presenting each guest, as he left the house after a prolonged party, with a cup of strong beef tea. They do the same thing in San Francisco. If there is any thing exhausting, it is an evening party, and if any thing can restore one after being a few hours in rooms crowded with stupid people, it must be beef tea. Then such soup as can be made with this! I tried it and know that nothing outside of Delmonico's can be half as good. Most people make a greasy porridge of rice and vegetables with just a suspicion of meat, and call it soup. Boil a carrot and a bit of celery in water until done, have an onion roasted until brown, and boil this in the liquid until it imparts a rich brown color. Put in half an ounce of the condensed beef to the quart of water, salt and season as may be desired, strain and serve. You have a soup as clear as wine which has the only fault that it is so good that it takes off the edge of the appetite for the rest of the dinner. Gail says the condensed beef will keep forever, 'for he has tried it twice.' I don't believe it, for I had a cake and it didn't keep but two days—reason: the soup was so good the first day, that it had to be repeated."

Excellent Lemon Pies.—As usually made, lemon pies, however palatable, are indigestible and not to be recommended. The pieces of lemon rind in them are as bad for the stomach as so many gravel stones. The following directions furnished for the *American Agriculturist*, have been several times tried, and we find the pies both digestible and delicious: For two pies, take two lemons, grate away the outer yellow coating and chop the rest *very fine*. Into two teacupfuls of hot water, stir well two tablespoonfuls of corn starch, and boil; add two teacupfuls of white sugar; when cool, add the beaten yolks of four eggs; then add the chopped lemons with their juice, stirring the whole well together. Line two tin or earthen-ware pie plates with pie crust, pour in the material and bake until the crust is done. Beat the whites of the four eggs to a froth, adding five or six tablespoonfuls of white sugar, and pour over the pies while hot; return them to the oven, and bake to a delicate brown. We have never eaten anything of the pie kind superior to the above preparation.

Soda-Ash, Saleratus, etc.

A correspondent says, "Will you please tell me the composition of Soda Ash, Carbonate of Soda, Saleratus, and Sal soda. What are they made of?" Questions like these are easily answered if the inquirer has some knowledge of chemistry, and are rather difficult if he has not. However, we will try. When wood is burned, all the combinations of potash with organic acids are converted into carbonate of potash, which remains in the ashes. The ashes are leached and the carbonate of potash, together with other soluble matters, are dissolved out and form a ley, which, when evaporated and the resulting dry mass melted, forms the potash of commerce. If the ley be simply boiled to dryness, without melting the mass, and this be exposed to heat and air sufficient to burn out some coloring

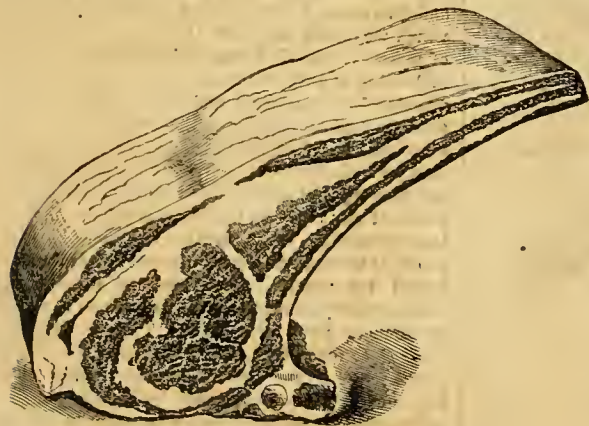


Fig. 2.—MIDDLE-RIB ROASTING PIECE.

oughly basted, and constantly turned, that, while the outside is only of a delicate dark brown

matters, pearlash is the result. Pearlash consists of carbonate of potash with some impurities. If the pearlash be exposed to an atmosphere of carbonic acid, such as is given off in fermentation, or in burning charcoal, it combines with more carbonic acid than it before contained, and becomes a more or less complete bi-carbonate of potash, or saleratus—aerated salt. Plants growing near salt water contain soda instead of potash, and by burning give an ash, which, when treated in the same way as wood ashes, gives soda ash or barilla; the soluble part of this dissolved in water and crystallized, yields sal soda, which is a crystallized carbonate of soda, and this exposed to carbonic acid would form a bi-carbonate of soda, corresponding to saleratus, but containing soda instead of potash. This was formerly the way of obtaining these soda compounds, but of late years they are made from common salt by a process too complex for description here, but the resulting products are the same.

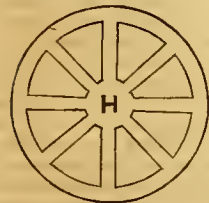
BOYS & GIRLS' COLUMNS.

Game of "Tag," with Variations.

Probably every boy and girl of ten years old knows how to play the old game of "tag." It is so old that the children of the Roman empire used to play it, thousands of years ago; the name "tag" comes from their language, *tago*, or *tango*, as it was written in later times, meaning "I touch." Several variations may be made to enliven the game. Thus in *Cross Tag*, when one boy (A) is running after another (B), a third one (C) crosses between them, then A must endeavor to tag C; if another boy (D) crosses between them, A must pursue him, and so on, until he touches the last boy who crossed before him. *Change Tag* is a new style of the play. The pursuer or "catcher" as he is called, while chasing a boy, calls out "change," then all the players must imitate the "catcher;" if he hops, they must hop; or he may commence jumping on both feet, or running with a skip, or with his hands behind him, or change his gait in any way he thinks best, to embarrass the others, and make it easier for him to catch them. Any boy who takes more than one step without changing after the catcher calls out, must become catcher. If two or more fail to make the change at the right time, the catcher may select his successor from them. This mode of the game will keep the wits as well as the legs of all the players in motion.

A Lively Game in the Snow.

When the snow is newly fallen, select a level spot and run out a circular track, with cross paths, as in the accompanying engraving. It may be of any diameter, about thirty feet is a convenient size. The round space (H) in the middle, should be large enough for all the boys joining in the game to stand in without crowding. This spot is called "Home." In playing this game, one boy is selected for "Fox," and he endeavors to touch any one



of the others when they are not at "Home," and the one so caught then becomes fox. Every "Chicken" must run only in the marked paths; if one steps outside the ring, or away from the paths, he must take the place of "Fox," until he can thus catch some one else. This is a capital game for boys and girls in cold weather.

A Just Reward.

When Napoleon I. sailed on his expedition to Egypt, the ships accompanying him were crowded with troops. It frequently occurred that a man accidentally fell overboard, and at such times Napoleon is said to have manifested the greatest interest in rescuing the unfortunate soldier from his peril, although when in battle, no general ever showed greater indifference to the wholesale slaughter resulting from his orders; there the certain loss of thousands of lives never deterred him from pursuing a plan which promised success. On the occasion referred to, he stimulated the sailors to watchfulness and exertion, by liberally rewarding all who helped to rescue a drowning soldier. One night a loud splash was heard near one of his ships, and immediately the cry was raised "man overboard!" The vessel was instantly put about, the boats lowered, and for a long time, the search continued, until at length the sailors succeeded in saving—a quarter of beef, which had slipped from a noose at the bow of the ship. Of course a good laugh followed, but Napoleon ordered that a larger reward than usual be paid,

as the sailors had exerted themselves, though unsuccessfully, as much as would have been necessary to save life.

The Game of Checkers or Draughts.

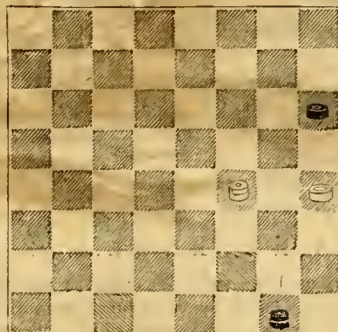
HISTORICAL.—In America the game is commonly called *Checkers*; in Great Britain, *Draughts*; in France, *le jeu de dames*; in Italy, *Dama*; in Germany, *Damen*, from the idea that the game was especially fitted for women. The origin of the game is uncertain. It is supposed to have preceded chess and certainly is of great antiquity. It has been played in Egypt for more than 4000 years; as appears from the monumental paintings, it was a common amusement in the reigns of the Osiridas, 2000 years B. C. It made its appearance in Europe only three or four centuries ago, when there was much intercourse between Southern Europe and Alexandria and other Egyptian ports, before the passage to India round the Cape of Good Hope replaced that through the Isthmus of Suez. It was played as now, with pieces all of which on the same board were alike in size and form, though in different boards they varied in shape, some being small, others large and rounded on the top, or carved in likenesses of human heads.

LAW OF THE GAME.—(Continued from page 26.)

1. The standard board must be of light and dark squares, not less than fourteen inches, nor more than fifteen inches across the squares.
2. The standard men, technically described as White and Black, must be light and dark (say White and Red, or White and Black), turned round, and not less than one inch, nor more than one and one-eighth inches in diameter.
3. The board shall be placed so that the bottom corner square on the left hand shall be black.
4. The men shall be placed on the black squares.
5. The Black men shall be invariably placed upon the real or supposed first twelve squares of the board, the White upon the last twelve squares.
6. Each player shall play alternately with the Black and the White men, and lots shall be cast for the color only once, viz.: at the commencement of a match, the winner to have the choice of taking Black or White.

POSITION NO. 2.

Black.



White.

White to play and win.

(Known by expert players as "Sturges' first position.")

Solution to Position No. 1. (See January number, p. 26.) The position should have been given as all kings. Three kings win against two, whenever the two are in the double corners. Young players should study this, and they will see that it is a forced win, in a few moves.

White.	Black.	White.	Black.
18 to 15	6 to 1	9 to 6	28 to 23
14 " 9	24 " 28	19 " 24	5 " 1
23 " 19	1 " 5	24 " 19	and wins.

In the game last month (page 26), the 14th move of black should have been printed 10 to 17, instead of 10 to 11.

GAME NO. 2.—OLD FOURTEENTH OPENING. (*)

Black.	White.	Black.	White.
1—11 to 15	23 to 19	15—8 to 12	(f) 24 to 19
2—5 " 11	22 " 17	16—15 " 31	26 " 22
3—4 " 8	17 " 13	17—12 " 19	22 " 8
4—15 " 18	24 " 20	18—14 " 17	21 " 14
5—11 " 15	28 " 24	19—10 " 17	8 " 3
6—8 " 11	26 " 23	20—7 " 10	25 " 21
7—9 " 14	(a) 31 " 26	21—17 " 22	(g) 20 " 16
8—6 " 9(b)	13 " 6	22—10 " 14	16 " 11
9—2 " 9	26 " 22	23—31 " 26	11 " 7
10—1 " 6(c)	32 " 28	24—6 " 9	13 " 6
11—3 " 8	(d) 30 " 26	25—14 " 17	21 " 14
12—9 " 13	19 " 16	26—22 " 25	29 " 22
13—12 " 19	23 " 16	27—28 " 1	7 " 2
14—13 " 17(e)	22 " 13	and the game is drawn.	

(a) 30 to 26, or 32 to 28, loses the game.

(b) 11 to 16 is the move generally made by young players; because they are afraid to break up their king row, but it is the move that loses the game.

(c) 9 to 13 would lose here. (d) 22 to 17, black wins.

(e) 8 to 12, or 14 to 17, white would win.

(f) 23 to 22 also draws. (g) 3 to 7, black wins.

(*) Is so called from its being familiar to players as the 14th game in Sturges' original work. He wrote a treatise on the game of draughts about sixty five years ago.

Answers to Problems and Puzzles.

The following are the answers to the Puzzles in the January number, page 26. No. 183. *Illustrated Rebus.*—On it is the best poll I see, or Honesty is the best policy. No. 184. *Mathematical Problem.*—Left open for another month, as no correct answers have been received. No. 185. *Illustrated Rebus.*—C on T in D in hole in S, or Continue in holiness. No. 186. *Charade.*—Andrew Jackson. No. 187. *Charade.*—Emancipation.

The following have sent answers up to the date of Jan. 8th: Mattie A. Goffe, 181; A. Jackson, 180, 181; Lida Newnan, 179; H. Johnson, 180; J. M. S., 183; May Kalbfus, 186, 187; Hen. M. Young, 183, 185, 186, 187; Sol. Beard, 186, 187; Jas. D. McGiffert, 186, 187.

New Puzzles to be Answered.

No. 183. *Arithmetical Problem.*—The Scramble.—Contributed to the *Agriculturist* by J. D. McGiffert, Columbia Co., N. Y.—A, in a scramble, seized on $\frac{3}{4}$ of a parcel of sugar-plums; B snatched $\frac{1}{4}$ of it out of his hands, and C laid hold on 3-10ths more; D ran off with all A had left, except 1-7th, which E afterwards secured slyly for himself; then A and C jointly set upon B, who in the conflict let fall $\frac{1}{2}$ he had, which was equally picked up by D and E.—B then kicked down C's hat, and to work they went anew for what it contained; of which A got $\frac{1}{2}$, B $\frac{1}{2}$, D 2-7ths, and C and E equal shares of what was left of that stock; D then struck $\frac{1}{4}$ of what A and B last acquired, out of their hands; they with difficulty recovered $\frac{1}{2}$ of it in equal shares again, but the other three carried off $\frac{1}{2}$ a piece of the same. Upon this they called a truce, and agreed, that the $\frac{1}{2}$ of the whole, left by A at first, should be equally divided among them. How much of the prize, after this distribution, remained with each?

No. 189. *Illustrated Rebus.*—Not new, but ingenious, and contains very excellent advice.

No. 190. *Mathematical Problem.*—Contributed to the *American Agriculturist*, by James Dickson, Olmstead Co., Minn.

Give the rule for the following: Any dividend being given, to find a divisor which added to its quotient shall make a sum equal to the dividend.

No. 191. *Anagrams.*—Contributed by "Susanne." 1. Pain's mother. 2. Tub's diary. 3. Under a vest. 4. To start Cain. 5. Bad in Creoles. 6. Soon in camp. What single words can be formed of the foregoing?

No. 192. *Spelling Exercise.*—A correspondent says, the word "scissors" can be spelled in 720 different ways, of course not correctly, but so that the sound will be the same, by using the vowels a, e, i, o, u, and y. Is this so?

No. 193. *Riddle.*—Green, white, pink and black; large as a hump on a camel's back; soaking wet like a dropsical sponge; Into its heart a knife I'll plunge; then from its body take a slice; smack your lips and say it is nice; skin and bones I'll throw away; what its name is I prithee say.



No. 194. *Illustrated Rebus.*—Proverb in a new dress.



No. 195. *Puzzle.*—When there's a will, there's a way. The above curious picture gives the answer.



THE TRUANTS' REVENGE. — Engraved for the American Agriculturist.

The story in this picture is very plainly told by the artist. A "good for nothing," truant boy, as some would call him, is lying in wait for his unsuspecting schoolmate who told the teacher about his "playing hookey," that is, keeping away from school without leave. His heavy shoe is the only convenient weapon he could find, and with it he intends to make a sudden and severe attack. The faces of the two boys are especially worth studying. Which do you like best? Probably most would prefer that of the pleasant looking boy. His present expression is certainly more agreeable, but his features indicate some things as unworthy those as shown in the hard lines of the other face. He looks like a deceitful boy, who would appear very good *when his teacher was looking*, and who would be likely to try and win favor by telling tales of others. The truant has some strong manly traits that all admire. He is firm, persevering, active and resolute. He has more stuff in him of which to make a man, than could be found in half a dozen of the other sort. His worst side is turned out, and he generally acts as he feels; he is no hypocrite. Both these boys may be educated to fill a useful place in society, but the truant, properly trained, will take the higher place. No boy is "good for nothing," naturally, but many become so by neglect, or by being despised and maltreated. If you know any "hard case" among your companions, one who is often in disgrace at school, do not make him worse by harsh usage; find out the good in him and encourage its growth; thus you may help to save him.

Difficulties of Lawyers.—A testy lawyer in court found himself bothered with a knotty witness who wouldn't explain, as he desired, the difference between the "thick" and "long" kinds of whalebone.—"Why, man," said he, "you don't seem to know the distinction between thick and long."—"Ya'as I dew."—"Explain it, then."—"Wa'll you'r thick-headed, but you ain't long-headed, no how!" said he.....Another one was nonplussed in the following conversation.—*Lawyer.*—Did the defendant knock the witness down with *malice pre-*

pense? *Witness.*—No, sir; he knocked him down with a *flat-iron*. *L.*—You misunderstand me, my friend; I want to know whether he attacked him with any *evil intent*. *W.*—Oh! no, sir; it was *outside the tent*. *L.*—No, no, I wish you to tell me whether the attack was at all a *preconcerted affair?* *W.*—No, sir; it was not a *free concert affair*, it was in a *circus*.

Pharaoh's Serpents.

Passing along Broadway, some weeks ago, we saw the sign of "Eggs of Pharaoh's Serpents for sale here." "What kind of eggs could those be," thought we, and went in to ascertain. Queer looking eggs they were, little bright cones, not much larger than the one shown in the figure, all nicely packed in a box with cotton. We purchased one box of eggs and took them home to hatch. It always requires heat to hatch eggs, and these, being serpents' eggs, rather more than the usual amount of heat. The directions were to place the egg upon a plate and light the small end. Rather a strange way to hatch an egg, but we followed the directions and applied the match—a little blue blaze flickered for an instant and that was all. Perhaps there was not heat enough, so we tried again, and the serpent was this time fairly warmed into life. It poked out its head and looked about, writhed and coiled itself, and kept coming and coming as if it never would stop. The people all shouted with astonishment, and we who don't often allow surprise to get the better of us, were in as much wonderment as the rest. Out of that tiny cone came a snake-like body several feet long. The illustration gives but a poor idea of the size, as it has to be upon such a small scale. "How could such a serpent be hidden in such a small egg?" our young readers will ask. It wasn't hidden there at all, but was formed out of the material the egg or cone contained. The so-called egg, is a little case of tin foil filled with a powder which, on burning, leaves a remarkably bulky substance. Upon lighting the cone, this powder gradually burns, and what is formed in the burning sticks together and makes a long slender body, which

looks much like a serpent. "What is the powder?" We have been expecting that question, and if we tell you that it is the *Sulpho-cyanide of Mercury*, perhaps you will not be much wiser. That it is a curious compound, consisting of Mercury or quicksilver, sulphur and cyanogen is about all that we can teach you about it. What cyanogen is, or how the sulpho-cyanide of mercury is made, can only be understood by those who have more knowledge of chemistry than boys or girls are supposed to possess. No more amusing toys have been introduced, and they have but two faults, they are a little expensive and somewhat dangerous. The first we bought cost 50 cents for three tin foil "eggs." As to the danger, the



substance from which they are made is poisonous, and they ought never to be trusted in the hands of young children who might be tempted to taste them; and, when they are burned, it should be done either in the open air, or in front of an open fire place, where the draft will carry off the poisonous fumes.—The name, Pharaoh's serpents, is given from the idea that the Egyptian magicians may have produced their snakes thus, but they could hardly have known enough of chemistry for that.

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The **HORTICULTURIST** is now entering on its twenty-first annual volume. It was originally edited by the late A. J. Downing, and still maintains its high reputation. In all departments it commands the best talent in the country.

I. The **HORTICULTURIST** for March, April and May will contain the Spring advertisements of all the leading Nurseries in the Country.

II. If you wish to know where to buy Grape Vines, Fruit Trees, Evergreens, Flowers, Seeds, Agricultural Implements, and Household Articles, consult the advertising columns of **THE HORTICULTURIST**.

III. If you wish to know how to prune and train your Grape Vines, take every monthly number of **THE HORTICULTURIST**—Two dollars and fifty cents per annum.

IV. If you wish to know how to plant and cultivate your garden, take **THE HORTICULTURIST**.

V. If you wish to know how to grow good fruit and plenty of it, take **THE HORTICULTURIST**.

VI. If you wish to know all about flowers and their cultivation, take **THE HORTICULTURIST**.

VII. If you wish to know all about ornamental trees, take **THE HORTICULTURIST**.

VIII. If you wish to know how to plan and construct your Country Houses, take **THE HORTICULTURIST**. In it you will find good plans for Farm Houses, Barns, Gates, and Outbuildings.

IX. If you wish to lay out and make attractive and valuable the grounds about your country Home, take **THE HORTICULTURIST**. It treats the subject of Landscape Gardening thoroughly.

X. If you wish to know how to build and manage your Graperies, Conservatories, Orchard Houses, etc., take **THE HORTICULTURIST**.

XI. If you wish to know how to grow Fruits, Vegetables, etc., for profit, and all other things worth knowing about the Orchard, Vineyard, Garden and Nursery, consult **THE HORTICULTURIST**.

GEO. E. & F. W. WOODWARD, Publishers,
37 Park Row, N. Y.

Fourth Edition Now Ready.

Woodward's Country Homes.

A new popular and practical book for every one, containing 122 designs and plans for country homes of moderate cost, with outbuildings and gates, and a full illustrated description of the BALLOON FRAME. Post-paid everywhere for \$1.50, and well worth the money.

Address GEO. E. & F. W. WOODWARD,
Authors and Publishers, 37 Park Row, N. Y.

MAKE YOUR OWN SOAP WITH

**B.T. BABBITT'S POTASH
IN TIN CANS
70 WASHINGTON ST. N.Y.**

PURE CONCENTRATED POTASH, or READY SOAP MAKER. Warranted double the strength of common Potash, and superior to any other saponifier or ley in the market. Put up in cans of 1 pound, 2 pounds, 3 pounds, 6 pounds, and 12 pounds, with full directions in English and German for making Hard and Soft Soap. One pound will make 15 gallons of Soft Soap. No lime is required. Consumers will find this the cheapest Potash in market.
B. T. BABBITT,
64, 65, 66, 67, 68, 69, 70, 72 and 74 Washington-st., N. Y.

**B.T. BABBITT'S SALERATUS
70 WASHINGTON ST. N.Y.**

If you want Healthy Bread, use B. T. BABBITT'S best Medicinal Saleratus, "Made from Common Salt." Bread made with this Saleratus contains, when baked, nothing but common salt, water and flour.

B. T. BABBITT,

Nos. 64, 65, 66, 67, 68, 69, 70, 72, and 74
Washington-st., New York.

LIGHT BISCUIT

Made in fifteen minutes with

**B.T. BABBITT'S
STAR YEAST POWDERS
70 WASHINGTON ST. N.Y.**

Advertisements \$1 per line of space—14 lines per inch.

KNOX'S SMALL FRUIT CATALOGUE FOR SPRING of 1866, IS NOW ISSUED,

and will be sent to all applicants enclosing 10 cents.

It contains **Descriptions and Illustrations** of the leading varieties of

Grapes, Strawberries, Raspberries, Blackberries, Gooseberries, Currants, &c.—Select Lists of Fruits, made up with great care:

Letters from **Eminent Fruit Growers**, and **Reports of various Committees**, who have visited our grounds, including the **Report of the Ad Interim Committee of the Ohio Pomological Society, 1865**, written by the President, **DR. JNO. A. WARDER**, from which we extract:

"Four things struck all the visitors as especially worthy of note: The modes of propagation and culture of the soil, the varieties under culture and trial, the wonderfully abundant product of magnificent berries, and the excellent and successful mode of harvesting and marketing the fruit, all of which may properly be introduced into this Report for the benefit of our fellow members."

Much valuable information, in each of these prints, is contained in this Report, and other parts of the Catalogue.

JUCUNDA---OUR NO. 700 STRAWBERRY.

After thorough trial, we have no hesitation in saying that for **UNIFORM AND LARGE SIZE, BEAUTY OF FORM AND COLOR, ENORMOUS YIELD, LONG CONTINUANCE IN BEARING, GREAT PROFIT, HEALTH AND VIGOR OF PLANT,** and other desirable qualities, this is

The most Valuable Strawberry of which we have any knowledge.

See page 32 of **AGRICULTURIST**, Jan. No. 1866, and the **NEW EDITION** of our Catalogue.

J. KNOX,

Box 155, Pittsburgh, Pa.

FORTY ACRES OF SMALL FRUITS.—If you would know how to plant, cultivate and market, send for my **DESCRIPTIVE AND RETAIL CATALOGUE**. If you wish to purchase largely, to plant or sell again, send for my **"WHOLESALE LIST."** 25¢ Stamp not refused, yet not required. Address **A. M. PURDY**, South Bend, Indiana.

EDITORS wishing to take stock for advertising, send copy of paper and terms, to **A. M. PURDY**, South Bend, Indiana.

1,000,000 Catawba and Isabella Grape Wood Cuttings.
100,000 Grape Roots of the leading varieties.
50,000 Osage Orange Plants.
50,000 Strawberry Plants.
20,000 Raspberry Plants, for sale by

COWDERY BROTHERS,

Send for Price List. Sandusky, Ohio.

250,000 GRAPE VINES FOR SALE of Concord, Hartford, Catawba, Delaware, Norton's, Clinton, and other valuable sorts. Also 200,000 Cuttings of the above sorts. Send Postage stamp for Catalogue.
D. H. SCHROEDER,
Bloomington, Illinois.

STRAWBERRIES, Blackberries and Raspberries, all the best and newest varieties. Catalogues gratis.
SAMUEL L. ALLEN, Cincinnati P. O. N. J.

THE IONA AND ISRAELLA GRAPES

Greatly surpass all others in excellence and value for all purposes. It is admitted by all good judges who are acquainted with them, that they are not only able to establish American Grape Culture on a new and sure foundation of excellence, but that they must also in a great measure, displace all others from cultivation, as soon as plants in sufficient number can be produced to do it.

The **ISRAELLA** is the **BEST** and **EARLIEST** of all **BLACK GRAPES**, and unlike all of the others of this class, it is excellent in flavor, adhering firmly to the bunch, and well adapted for late keeping.

The **IONA** is also **VERY EARLY**, and is the most beautiful and excellent of all grapes. In pure delicacy and refinement of flavor, and in uniform tenderness of flesh, it sustains comparison with the Best European kinds of temperate climate advantageously, and surpasses them in spirit. It is able to bear comparison in *spirit and flavor* with the famous **MUSCAT of Alexandria**, which is the severest test to which any grape can be subjected. The **IONA** in open air gives better fruit than Black Hamburg under glass, and is the most certain in its perfectly ripened crop, of all our native varieties.

In anticipation of a great demand for plants of these kinds of best quality, (No. 1, Extra, and Best Selection,) I took the utmost possible care in propagating to provide a large stock to be able to meet the most extensive wholesale orders, as well as those for retailing. Fall orders have exceeded expectation.

For the supply of **CLUBS** and for **RETAILING**, I have reserved a supply of quality that can not be equalled, and for moderate orders at wholesale, I have still remaining, plants of nearly all of the most desirable grades, but not nearly enough for the full supply of the spring sales, judging from the fall demand, and the present call for plants. A few classes are already exhausted. (See revised list before ordering.)

I desire to disseminate the best quality of plants of these new kinds in gardens and vineyards, as widely as possible, and shall make unusual effort to diffuse the knowledge of them. In furtherance of this, I have with the utmost care produced a stock of vines that will maintain the reputation of the **Iona Establishment**, which in facilities for producing the best class of vines is not equalled in the world.

Before sending out the **IONA** I made extensive provision for a supply of the best of wood to propagate from, to avoid the need of "*coazing unsuitable buds to make feeble vines,*" by which so many buyers of new kinds have been disappointed. (See **AMERICAN AGRICULTURIST**, LAST VOLUME, PAGE 379, ALSO PAGE 392.)

Having the original stock of vines and abundance of mature wood from established stocks prepared especially to propagate from for the production of the best and most hardy of plants, and such as no other Establishment can command, I am able to offer plants which, for cheapness and quality, are worthy of the attention of every purchaser.

I have a class not equal to best No. 1 for the garden, that can be confidently recommended as cheap and excellent for vineyards. They are well supplied with strong and fibrous roots, not merely "*root buds,*" which are expected "*to furnish fibres next season.*" I have others still cheaper that are good plants, and well furnished with actual fibres—such as have suited intelligent investigating buyers the past season to the extent of many thousands of plants. I invite all interested to call and make thorough examination of plants and prices, and methods of production.

My plants from "*green cuttings*" will be found to be very cheap and good of their class, but not nearly equal to first-rate single-eye plants in hardiness and other qualities. Samples of all grades sent on application.

I would invite attention to my great stock, and especially to plants of **Adirondack, Rogers' Hybrids, and Allen's Hybrid**. The latter, from its excellence, beauty and extreme earliness, deserves a place in every garden. It is the best White Grape. I have some desirable Delaware Vines still unsold.

I have prepared a Pamphlet of about thirty pages, which, besides other important matter, contains a full account of the characteristics of the **IONA** and **ISRAELLA**, with their origin and history, and the opinions of many well qualified to judge of their merits. It has also accurate representations of **IONA** and **ISRAELLA** vines in bearing. It is sent for a two-cent stamp.

For the thorough study of the subject I have prepared the "**MANUAL OF THE VINE**," which is drawn from long and extensive experience in Grape Culture. It is illustrated with about one hundred and fifty engravings, chiefly representations of vines of my own training. One well qualified to

judge says: "The Chapters on 'The Ripening of Grapes,' and 'The Progress of Taste,' are of importance to every one interested in good grapes, and are worth the price of a large volume." The Manual is sent for Fifty cents.

For nearly a decade, many thousands have yearly followed the directions of the Manual, in all parts of the country, and I do not know of one that has found them erroneous or defective. Readers of the Manual will learn the proper use of "Pots" and "Borders" in propagation, and how to judge of the quality of plants.

Club propositions sent with the pamphlet without charge. These offer most liberal and advantageous terms to all purchasers, whether by dozens, to be sent to one address, or singly by mail to as many different offices, or by hundreds or by thousands. Samples of vines sent on application, and engravings and other facilities afforded to those who desire to form clubs. The safe reception of the vines is in all cases guaranteed.

C. W. GRANT, Iona,

(near Leekskill) Westchester Co., N. Y.

P. S.—A fine Engraving of a branch of the **ISRAELLA** with three bunches natural size, sent for Fifty Cents.

A fine **Colored Plate** of a bunch and branch of the **IONA** sent for \$1.50. The same sent to Agents for Clubs, for \$1.00. Plain Lithographs of **IONA** with branch and leaf, Twenty Cents. C. W. G.

DELAWARE AND IONA VINES.

Parsons & Co.,

Flushing, near New York.

Offer for the spring trade a fine stock of these as well as of most of the leading sorts of Vines.

Standard **PEAR TREES** they have also of large size at moderate rates, as well as other **Fruit Trees**.

Agriculturist Strawberries, \$5 per 100.

EVERGREEN

Trees and Shrubs both for Nurserymen and private growers in very great variety.

Rhododendrons, all perfectly hardy and of the best sorts, which have been long and thoroughly tested in our own grounds.

Hybrid Perpetual Roses on their own roots and grown in the open ground, with fine roots, at \$20 per 100.

ORNAMENTAL TREES

for Streets and Lawns.

Flowering Shrubs of all the varieties.

Flower and Vegetable Seeds, CHOICE and NEW.

VICK'S ILLUSTRATED CATALOGUE OF SEEDS and FLORAL GUIDE

FOR THE SPRING OF 1866,
IS NOW PUBLISHED.

It contains full descriptions of the choicest Floral treasures of the World, and the best vegetables, with plain directions for culture. This is a true Guide in the Flower Garden, and contains about *Seventy pages*, illustrated with over *Fifty Engravings* of Flowers, &c., and a

Colored Bouquet of Flowers and Grasses.

25¢ Sent by mail, free of postage, to all who apply, enclosing *Ten Cents*, which is not one half the cost. Sent free without application, to all my customers of last season, as fast as we can get copies ready.

Flowers from Seeds sold by me obtained the First Prizes at the principal State Fairs and hundreds of County Fairs the past Autumn. Address

JAMES VICK,

Rochester, N. Y.

New Vegetable Seeds for 1866.

The **TILDEN TOMATO**.....per paper, 25 cents.
GIANT WAX BEAN....." " 25 cents.
MONITOR LETTUCE, very large....." " 25 cents.

With Fifty other desirable varieties, for which see

Dreer's Garden Calendar for 1866.

Which will be mailed to all who enclose a stamp.

Address

H. A. DREER, SEEDSMAN,

714 Chestnut Street, Philadelphia, Pa.

The New Variegated Follaged Plant. Japanese Maize.

Price 25 cents per packet of Twenty Seeds.

HENDERSON & FLEMING,

SEEDSMEN and FLORISTS,

67 Nassau Street, New York.

GARDEN AND FLOWER SEEDS BY MAIL, pre-paid, including all the really valuable old sorts, with many new and fine varieties. Priced Catalogues will be sent to any address. Agents Wanted. **B. M. WATSON**, Old Colony Nurseries and Seed Establishment, Plymouth, Massachusetts.

HENDERSON AND FLEMING'S

GARDEN SEEDS, CROP OF 1865.

Most of our Vegetable Seeds have been grown by us, and are such as are used as the

Best and most Profitable Sorts

In our extensive Market Gardens near Jersey City, where for nearly twenty years, we have grown to supply the New-York market. Our Florist's Business, also, has long been, and is now one of the largest here. So from this experience as

Practical Market Gardeners and Florists,

we believe we are well able to judge of the quality of either Flower or Vegetable Seeds.

We sell no seeds without testing their germinating qualities, and all such as fail, or even partially fail, are rejected. From this practice, we assure all purchasers that there can be no failure of Seeds bought from us, if properly planted.

Our Best Early Market Tomato

Is the **EARLY SMOOTH RED**—our growth—ready here by middle of July.

Price 30 cents per ounce; \$3 per pound.

Our Best Market Egg Plant

Is the **NEW YORK IMPROVED**.—Large purple, most abundant bearer.

Price 75 cents per ounce; \$10 per pound.

Our Best Market Onions

Are the **RED WETHERSFIELD** and **YELLOW DANVERS**, ready

from seeds in August, and from sets in the middle of July.

Seeds 25 cents per ounce; \$3 per pound.

Sets 50 cents per quart; \$15 per bushel.

Our Best Early Market Radishes

Are the "**FRENCH SCARLET TURNIP**," and "**SHORT TOP LONO**."

Price \$1.50 per pound.

Our Best Early Market Lettuce

Is the **CURLED SIMPSON**, an improved Silesia, of our own growth, marketable here the middle of May.

Seeds 50 cents per ounce; \$6 per pound.

Our Best Early Market Beet

Is the "**SHORT TOP ROUND**," an improved strain of our own growth, marketable here middle of June.

Price 25 cents per ounce; \$1.50 per pound.

Our Best Early Market Cabbage

Is the true **JERSEY WAKEFIELD**, ten days ahead of all others. Seeds of our own growth.

Price 25 cents per packet; \$1 per ounce; \$12 per pound.

Our Best Early Market Cauliflower

Is the **DWARF ERFURT**, a large headed, compact growing variety. We grow 15,000 heads per acre, which are sold every year before the 1st of July, in the New York markets.

Seeds 50 cents per packet; \$2.50 per ounce; \$30 per pound.

Our Best Early Market Pea

Is the "**EXTRA EARLY**," ten days earlier than any other variety, and very productive.

Price 50 cents per quart; \$12 per bushel.

Our Best Early Market Sweet Corn

Is the **DWARF PROLIFIC**, growing only four or five feet high, ready in July.

Price 40 cents per quart; \$10 per bushel.

The Best Market Celery

Is our "**NEW DWARF WHITE**," it is solid, crisp and sweet, and of easy culture. Seeds of our own growth.

Price 25 cents per packet; \$1 per ounce; \$10 per pound.

Mailed with our "**ESSAY ON GROWING AND PRESERVING**."

Every good variety of Vegetable Seeds, also of Flower Seeds, supplied in quantities to suit.

For further particulars send for

Our Descriptive Catalogue of Seeds

Now ready, which will be mailed on receipt of ten cents. To our customers of last year it will be mailed free.

HENDERSON & FLEMING,
Seedsmen, Market Gardeners & Florists,
67 Nassau St., cor. of John St.,
New York.

CHOICE SEED.

I would again invite the attention of the public to my Annual Catalogue of choice and reliable garden seeds, embracing over two hundred varieties, over one half of them of my own growing. I would invite particular attention to the following list of new, rare, or very desirable vegetables. **Marblehead Mammoth Cabbage**, (the king of all cabbages, sometimes weighs 60 lbs., and averages 30 lbs. by the acre. No cabbage will grow so large in the hot south as this. My seed are grown from the very largest and best of heads. I was the original introducer of this, and of a number of the varieties in the following list.) **Stone Mason Cabbage**, (a very large drumhead, remarkably reliable for heading, very profitable for market; heads very hard and very tender. Put up in half oz. packages, or sold by the pound.) **Burnell's King of the Dwarfs**, (the earliest of all cabbages, new, just from England, very fine and sweet flavor.) **Richmond's compact Brussels Sprouts**, (new, from England; selected for its very dwarf and compact habit.) **Mammoth Sweet Corn**, (the largest sort known, weighing two to three pounds to the ear; very sweet. It took the first prize at the Annual Exhibition of the Mass. Hort. Socy., of 1864.) **Mammoth French Squash**, (weighs from 100 to 200 lbs.) **Mammoth Cheery**, (an improved French variety; largest of all.) **American Turban Squash**, (the driest, sweetest and richest flavored of all fall squashes. My seed [I introduced this] are the purest in the country.) **New York Improved extra large purple Egg Plant**, (this is of larger size and of a deeper purple than the common large purple.) **Striped Gualope Egg Plant**, (grows to size of long purple, striped with yellow, purple and white; quite ornamental, edible.) **Ornamental Kale**, (several varieties in one package. Fine for either the Flower or Kitchen garden.) **New Alma Cauliflower**, (a new English variety; it has given great satisfaction.) **Leucomant's Mammoth Cauliflower**, (a new French sort, which promises to be the largest and most reliable variety grown.) **Early Paris Cauliflower**, (imported seed; a standard sort.) **Ward's Nectar Melon**, (pure; the richest and spiciest of all the green fleshed varieties.) **Caterpillar Plants**, several varieties in one package; a curious oddity from France.) **Vegetable Snails**, (another vegetable curiosity used by the French, cooks to garnish their dishes.) **Striped Leaved Japanese Maize**, (a new and beautiful plant from Japan, with foliage striped with green and white, and at times with rose.) **Snow Cucumber**, (a long, coiled, snake-like curiosity.) **Vilmorin's new wrinkled edible fodder Pea**, (the first wrinkled kind yet known, the pods of which are eaten.) Each of the above forwarded by mail, post-paid by me, at 25 cents a package. Also **Early Cracker Onion**, (a flat variety, the earliest of all the yellow sorts; quality very superior. See my Treatise on Onion Raising, page 13.) **Early Red Danvers Onion**, (an early, round red variety, of a fine bright color.) **Early Extra Flat Turnip Beet**, (has a very small leaf top; quality excellent.) **Red Castelnandary Beet**, (a famous French variety, in France it has a nut-like flavor; flesh deep purple, very tender, sweet and rich flavored.) **Giant Ovoid Mangel Wurtzel**, (a new French sort, characterized by its firm, solid flesh, large size and symmetrical growth.) **Dilliston's Extra Early Pea**, (of 116 varieties tested in England, this proved to be the earliest; seven days earlier than Daniel O'Rourke.) **Tom Thumb Pea**, (very early; ten inches high; very productive.) **Dwarf New Dwarf Pea**, (new; very dwarf, peas mostly indented, each plant forms a bushy growth, but one pea being required to about a foot of row.) **Brown's New Dwarf Early Marrowfat Pea**, (a new variety, which may be relied upon as both the earliest and most dwarf Marrowfat grown.) **McLean's Advance**, (new; dwarf, wrinkled, very early and productive; an improvement on Napoleon.) **Princess Royal**, (new English pea, very productive. These two varieties have been selected as best out of over 20 new sorts.) **Hair's Dwarf Mammoth**, (this is a larger

pea than the Champion of England, grows but about half as high, is sweet and excellent.) **Scarlet Flowering Bean**, (an English bean, quite ornamental; grows about two feet high.) **Extra Long Caseknife**, (a very vigorous and productive variety; has given great satisfaction.) **Concord Bean**, (the earliest pole bean I have found; in quality resembles Horticulturalist, but yields much better.) **Indian Chick Pea**, (the best string pole bean known; always in condition for stringing.) **Yard Long Bean**, (foliage highly ornamental; bean a curiosity.) **Jet Cranberry**, Mottled Cranberry, (each of these are an improvement in health, vigorous growth and productiveness, on the old-fashioned Cranberry or Tery bean.) **Tilden's New Tomato**, **New Mexican Tomato**, **Mammoth Chihuahu Tomato**, **Cook's Favorite**, **French Upright**, **Early York**, and **Bates' Extra Early Tomatoes**, (for particular description of these, see my advertisement in another column.) **Bates' Extra Early Sweet Corn**, (earlier than Darling's Early, a variety of the sweet wrinkledkerneled corn, excellent for the table.) **Golden Sweet**, (early, tender, sweet, with a rich flavor, peculiarly its own.) **Sweet Mexican Corn**, (the sweetest and tenderest variety I have yet found.) **Late Red Cob**, old-fashioned eight-rowed sweet corn, (the ears of these two varieties grow to a very large size; quality sweet and very tender, keeping a long while in condition for table use.) **Chufas**, (very prolific; taste very much like a fine Coconut.) **Hubbard Squash**, (the driest, sweetest and richest flavored of all winter squashes. I introduced this seed pure.) **Yokohama Squash**, (this new variety from Japan, has the finest grain of all squashes, with a rich, marrow-like taste.) **Boston Marrow**, (I consider my variety to be the purest in the United States; it took the first premium at the last Annual Fair of Mass. Hort. Society.) **Para or Polk Squash**, (a bush squash for late fall and winter use; in quality it resembles a rich Crookneck. My seed stock came from Para, and is perfectly pure.) **Swiss Chard**, (the best of all the Beet family for greens, the leaf stalks are used as Asparagus.) **Chinese Sugar Cane**, (imported seed; pure.) **Othetian Cane**, (by some preferred to all other varieties for cultivation in the North.) **Covent Garden Radish**, (very long, of extra bright scarlet color; Market Gardeners try this!) **Surry White Wheat**, (a new English sort, highly recommended for poor and elevated soils; less subject to blight and rust than other varieties, and has yielded 15 per cent. more than every variety with which it has come into competition.) **Fejee Bean**, (warranted to be both the earliest and the hardiest of all bush beans.) **Improved Green Globe Savoy Cabbage**, (as reliable for heading as my Stone Mason, the quality of the Savoy is superior to all other varieties for table use.) **Mammoth Aillet**, (extra tall leaf, largest of all.) **True Boston Curled Lettuce**, (the most ornamental lettuce known.) **Neapolitan Cabbage Lettuce**, (this is one of the finest Cabbage Lettuces yet introduced.) **Six choicest varieties of Cabbage Lettuce**, (the six finest native and foreign sorts, in one package.) **White Japan Melon**, (very early, remarkably sweet, very popular.) **Allen's Superb**, (quality very superior; by some called "King of Melons.") **Orange Watermelon**, (new; when fully ripe the skin peels off like that of an orange.) **Early Sebce Potato**, (new; has all the characteristics of the excellent Jackson White, but is ready for market from ten days to a fortnight earlier. A decided acquisition.) **Early Chenery**, (a new, very early, dry potato, becoming quite popular in Boston Market.) **Goodrich's Seedling**, (new, quite early and productive.) **Garnet Chili**, (remarkably free from rot; large, solid, very productive; an excellent keeper.) **Chick Pea**, (used on the Continent of Europe as a substitute for coffee.) **Yellow Lupins**, (extensively used in Europe for ensilaging; highly recommended in U. S. Agricultural Report.) **Improved Long Green Cucumber**, (extra long; very fine.) **New Jersey Hybrid Cucumber**, (one of the largest and best varieties cultivated.) **Ornamental Gourd**, (many varieties in one package, including Dipper Gourd.) **Sutton's Students Parsnip**, (new, originated in England; de-

sirable.) **Chinese Rose Winter Radish**, (decidedly the best of all the winter sorts; an acquisition.) **Hood's Dwarf Imperial Purple Celery**, (a new variety from France.) Each of the above will be forwarded, post-paid, by me, at 15 cents per package, and warranted to reach the purchaser. Catalogues sent gratis to all.

JAMES J. H. GREGORY,
Marblehead, Massachusetts.

FRESH ONION SEED.

Those who wish to purchase seed directly from the grower, can be supplied with Large Red, Early Round Red (very bright colored), Yellow Flat, Early Cracker, and Early Round Yellow Danvers Onion Seed,—all grown by myself from the very best of seed stock and warranted to be both fresh and pure. Also half early Red, grown for me by an honest Quaker. The Danvers will yield a third more than any of the flat sorts, and sell far more readily and at a higher price in the Eastern market.

JAMES J. H. GREGORY,
Marblehead, Massachusetts.

Gregory's Seed Catalogue!

My Seed Catalogue of Garden and Vegetable Seeds, embracing about three hundred varieties, a large proportion of them of my own growing, will be sent out in January.—It will contain some new and rare varieties, not to be found in other catalogues, and will be sent gratis to all. Those who ordered seed of me last season, will receive it without writing for it. I was surprised last season by a degree of patronage that was wholly unanticipated. I have this season consequently increased my working force to meet promptly all orders.

All seed ordered warranted to reach the purchaser.

JAMES J. H. GREGORY,
Marblehead, Massachusetts.

NEW TOMATOES.

Tilden's New Seedling. Large, well shaped, very rich color, remarkably productive, of excellent quality, and keeps well for market purposes.

The Cook's Favorite. Large, apple shaped, very vigorous and productive. Raised by the acre, it brought nearly double the price of other sorts in Boston market this season.

Mammoth Chihuahu. Size enormous, weighing 2 to 3 lbs. each, one of the largest will weigh a quart measure! Quality excellent.

Mexican Tomato. This is a large, round variety of Lester's Perfected. They are as large and as uniformly round as Cook's Favorite, and are prodigious bearers.

Early York. Very early; mostly of a flat round shape, of good market size, of excellent quality and very productive.

Tomato de Lave. The French upright or bush tomato. This variety is entirely distinct and will bear planting eighteen inches apart.

Bates' Extra Early. A remarkably early round variety, of good quality and of good market size.

Either of the above varieties will be forwarded post-paid by me at 15 cts. a package, and warranted to reach the purchaser.

JAMES J. H. GREGORY,
Marblehead, Massachusetts.

SEEDS—Fresh, Genuine and Choice Garden and Flower Seeds.

JOHN VANDERBILT, 23 Fulton Street, New York,

WHOLESALE AND RETAIL DEALER IN

FARM AND GARDEN IMPLEMENTS AND MACHINES.

GARDEN, FIELD, FLOWER, BIRD AND TREE SEEDS OF EVERY VARIETY.

GUANO, BONE DUST, PHOSPHATES, POUDRETTE, PLASTER, ANIMAL MANURE.

PLANTS, TREES, SHRUBS AND ROOTS.

The following Seeds will be promptly sent by Mail, Postage free, on receipt of Prices Annexed :

In respectfully soliciting orders from the readers of the *AGRICULTURIST* and others, I would state that fully appreciating the importance of reliable seed to secure a profitable and satisfactory return to the cultivators of the soil, it is my constant study and care to furnish such only as are pure, reliable, and the very choicest of their kind. My supply is obtained from the sources where the climate and soil are best adapted to bring the particular seed to its greatest perfection—and from the most reliable growers in this Country and Europe. The list presents only the more favorite and well-known varieties. I will supply almost any other kind required, and will select for those who do not know the peculiarities of the different varieties, when desired.

Artichoke —Green Globe.....	per oz.	60 cts.	per p'kt.	10 cts.
Asparagus —Giant.....	per qt.	10	per p'kt.	05
Beans —Broad Windsor.....	per oz.	50	per p'kt.	10
Early Newington Wonder, bush.....	50	10		
Early Mohawk.....	50	10		
Refugee, or, 1000 to 1.....	50	10		
Large White Lima, pole.....	75	10		
Beet —Extra Early Flat Bassano.....	per oz.	10	per p'kt.	5
Extra Early Blood Turnip.....	10	5		
Pine Apple (new).....	30	5		
Long Smooth Blood.....	10	5		
Swiss Chard.....	15	5		
White Sugar.....	10	5		
Yellow Sugar.....	10	5		
Long Red Mangold Wurtzel.....	10	5		
Yellow Globe Mangold Wurtzel.....	10	5		
Brussels Sprouts	30	10		
Broccoli —Early White.....	60	10		
Early Purple.....	60	10		
Early Purple Cape (lines).....	75	10		
Early Walcheren.....	\$1.00	13		
White Cape or Cauliflower.....	1.00	15		
Cabbage —Early Dutch.....	40	10		
Early York.....	25	5		
Early Large York.....	25	5		
Early Sugar Loaf.....	25	5		
Early Battersea.....	25	5		
Early Winingstadt.....	50	10		
Early Ox Heart (French).....	40	10		
Earliest Dwarf (fine flavor).....	50	10		
Large Late Bergen.....	50	10		
Large Late Drumhead.....	50	10		
Large Premium Flat Dutch.....	50	10		
Stone Mason.....	60	10		
Drumhead Savoy.....	25	5		
Green Globe Savoy.....	25	5		
Red Dutch (for pickling).....	40	10		
Cardoon —Large Solid.....	75	10		
Carrot —Early Horn.....	15	5		
Long Orange.....	15	5		
Long Blood or Purple.....	25	5		
Large Altringham.....	15	5		
Long White.....	10	5		
Cauliflower —Early London.....	75	10		
Half Early Paris.....	1.50	20		
Nonpareil.....	1.50	20		
Large White French.....	1.00	15		
Early Walcheren.....	1.00	15		
Le Normand's (very large).....	2.50	30		
Celery —Large White Solid.....	30	5		
Red Solid.....	30	5		
Celeriac or Turnip Rooted.....	30	5		
Chervil —Curled.....	30	5		
Chicory	10	5		
Colewort or Collards.....	20	5		
Corn —Extra Early Dwarf Sweet.....	per qt.	50	per p'kt.	10
Early Darling's Sugar.....	50	10		
Stowell's Evergreen Sugar.....	50	10		
Mammoth Sugar.....	50	10		
Early Tuscarora.....	50	10		
Corn Salad or Petticoats.....	per oz.	10	per p'kt.	5
Cress —Curled or Peppergrass.....	10	5		
Broad Leaved.....	10	5		
Water or Winter.....	60	10		
Cucumber —Early Short Green.....	15	5		
Early White Spined.....	15	5		
Early Cluster.....	15	5		
London Long Green.....	20	5		
Long Green Turkey.....	20	5		
West India Gherkin (Burr).....	40	10		
Prize Cucumber (for forcing).....	40	10		
Egg Plant —Long Purple.....	50	10		
Improved New York Purple.....	1.00	15		
Endive —Broad Leaved.....	20	5		
White Green Curled.....	20	5		
Kale —Green, Purple and Brown Curled.....	25	5		
Sea Kale.....	30	5		
Siberian or German Greens.....	15	5		
Cottagers.....	30	5		

Kohl Rabi —Early White Vienna.....	per oz.	40	per p'kt.	10
Large Green or White.....	25	5		
Large Purple.....	25	5		
Leek —Large Scotch Flag.....	30	5		
Lettuce —Early Curled Silesia.....	25	5		
Early White Cabbage.....	25	5		
Fine Butter.....	40	10		
Curled India Head.....	40	10		
Paris White, Green, & Brown Cos.....	30	5		
Magnum Bonnin Cos.....	40	10		
Crown Dutch.....	25	5		
Hardy Green.....	25	5		
Martynia (for pickles).....	30	5		
Musk Melon —Early White Japan.....	40	10		
Fine Nutter.....	15	5		
Skilman's Fine Netted.....	15	5		
Green Citron.....	15	5		
Large Yellow Cantelope.....	15	5		
Large Persian.....	20	5		
Water Melon —Mountain Sprout.....	15	5		
Ice Cream or Mountain Sweet.....	10	5		
Orange.....	50	10		
Citrus (for preserves).....	25	5		
Mustard —White and Black.....	10	5		
Nasturtium —Tall.....	25	5		
Dwarf.....	40	5		
Okra —Long Green and Dwarf White.....	15	5		
Onion—Early Red.....	20	5		
Large Red Wethersfield.....	15	5		
Yellow Danvers.....	20	5		
Yellow Dutch.....	20	5		
White Portugal.....	40	10		
Welsh (for salads).....	50	10		
Large Red Oval.....	40	10		
Parsley , Plain and Double.....	10	5		
Hamburg Rooted.....	15	5		
Parsnip —Long Smooth White.....	10	5		
Gumsey or Cup.....	10	5		
Peas —Extra Early McLean's Advancer.....	per qt.	1.50	per p'kt.	20
Extra Early Daniel O'Rourke.....	50	10		
Extra Early Burlington.....	60	10		
Extra Early Tom Thumb.....	1.00	15		
Bishop's Dwarf Proflic.....	75	10		
Champion of England.....	75	10		
Dwarf Blue Imperial.....	50	10		
Dwarf Sugar.....	1.50	20		
Epps' Monarch.....	1.50	20		
British Queen.....	1.25	15		
White and Black Eyed Marrowfat.....	50	10		
Pepper —Large Squash.....	per oz.	50	per p'kt.	10
Long Cayenne.....	50	10		
Large Bull Nose or Bell.....	50	10		
Sweet Mountain (for Mangoes).....	50	10		
Sweet Spanish.....	50	10		
Cherry.....	50	10		
Pumpkin —Large Cheese.....	10	5		
Seven-Year.....	40	5		
Mammoth.....	20	5		
Cushaw.....	10	5		
Connecticut Field.....	10	5		
Radish —Early Scarlet Turnip.....	15	5		
Early Yellow Turnip.....	15	5		
Grey Turnip.....	15	5		
Purple Turnip.....	15	5		
Early Olive Shaped.....	15	5		
Long Scarlet Short Top.....	15	5		
Long White Napier.....	15	5		
Long Salmon.....	15	5		
Long Purple.....	15	5		
Black Fall or Spanish.....	15	5		
White Spanish.....	15	5		
Scarlet Chinese Winter.....	25	5		
(for greens).....	10	5		
Rape	25	5		
Rhubarb —Linnaeus (the best).....	25	5		
Rouquette	30	5		
Salsify , or Vegetable Oyster.....	25	5		
Scorzonera	25	5		
Sorrel	15	5		
Spinach —Round Leaved.....	10	5		
Prickly or Fall.....	10	5		
Large Flanders.....	10	5		
Lettuce Leaved.....	10	5		
New Zealand.....	25	5		
Squash —Early Yellow Bush.....	10	5		
Early White Bush Scalloped.....	10	5		
Early Green Striped Bergen.....	10	5		
Summer Crookneck.....	10	5		
Winter Crookneck.....	10	5		
Boston Marrow.....	15	5		
Hubbard.....	25	5		
Lima Cucumber.....	15	5		
Yokohama.....	25	5		
Tomato —Powell's Early (Red).....	50	10		
Valencia Cluster (Red).....	30	5		
Extra Early Red.....	50	5		
Large Smooth Red.....	25	5		
Fejee Island.....	30	5		
Lester's Perfected.....	30	5		
Large Yellow.....	30	5		
Pear Shaped.....	30	5		
Red and Yellow Cherry.....	40	5		
Strawberry or Winter Cherry.....	50	10		

Turnip —Yellow Stone.....	per oz.	10	per p'kt.	5
Early White Dutch.....	10	5		
Early White Stone.....	10	5		
German Teltow.....	15	5		
Red Top Strap Leaved.....	10	5		
Long White French.....	10	5		
Yellow Aberdeen.....	10	5		
Large White Globe.....	10	5		
Skirving's Purple Top Rutabaga.....	10	5		
Improved Yellow Rutabaga.....	10	5		
White Rutabaga.....	10	5		
Herb Seeds —Aulse.....	15	5		
Borage.....	25	5		
Balm (Lemon).....	40	5		
Bene.....	20	5		
Caraway.....	10	5		
Coriander.....	10	5		
Dill.....	30	5		
Horehound.....	1.00	10		
Lavender.....	50	10		
Rosemary.....	75	10		
Sage.....	30	5		
Summer Savory.....	50	10		
Sweet Majoram.....	50	10		
Sweet Fennel.....	15	5		
Sweet Basil.....	50	10		
Thyme.....	50	10		
Worm wood.....	75	10		
Tobacco Seed —Havana.....	1.00	25		
Connecticut Seed Leaf.....	50	10		
Maryland.....	50	10		
Florida.....	75	20		
Ohio.....	75	20		
Virginia.....	75	20		
Missouri.....	75	20		
Kentucky.....	75	20		
Fruit Seeds —Apple.....	per qt.	75	per p'kt.	10
Pear.....	per oz.	50	per p'kt.	10
Quince.....	50	10		
Raspberry.....	1.50	15		
Current.....	1.00	10		
Strawberry.....	3.00	25		
Gooseberry.....	1.50	15		

Flower Seeds.

Per packet, 5, 10, 25 and 50 cents. (See Catalogue for varieties, &c.)	
20 Choice varieties of Annual Flower Seeds, (my selection).....	\$1.00
20 Choice varieties of Biennials and Perennial Seeds, (my selection).....	\$1.00
10 Extra varieties of Annuals and Perennial Seeds, (my selection).....	\$1.00
5 Prize varieties of Flower Seeds, (my selection).....	\$1.00
15 Select varieties of Green-house Flower Seeds, (my selection).....	\$3.00
50 Select varieties of Annuals, Biennials and Perennial Seeds, (my selection).....	\$2.50
100 Varieties of Annuals, Biennials and Perennial Seeds, (my selection).....	\$5.00
20 Hardy varieties of Annuals, Biennials and Perennial Seeds, (my selection).....	\$1.00

Field Seeds.

Seed Spring Wheat, Rye, White and Black Oats, Barley, Buckwheat, Flax Seed, Broom Corn, Spring Vetches, Chinese Sugar Cane, Seed Corn, Cotton Seed, German Spelt, Seed Potatoes of all kinds.

Grass and Clover Seeds.

Fine Mixed Lawn Grass for Grass Plots, Timothy, Red Top, Rye, Orchard, Blue, Fowl Meadow, Fescue, Tall Oat, Sweet Vernal, Hungarian Millet, Lucerne, Bohara, Alsike, Trefoil, Scarlet, Red and White Clover.

Farm and Garden Implements

Of the most approved patterns, embracing Plows, Harrows, Cultivators, Seed Drills, Corn Shellers, Hay and Stalk Cutters, Churns in great variety, Corn Mills, Fan Mills, Wheel Barrows, Wagons, Carts, Garden and Field Rollers, Road Scrapers, Sausage Cutters and Stuffers, Pumps, Garden Engines and Syringes, Vegetable Cutters, Lard and Wire Presses, Cotton Gins, Hay and Cotton Presses, Sugar Mills, Sugar Pans, Horse Powers and Threshers, Saw Machines, Mowing and Reaping Machines, Clothes Washers and Wringers, Ox-Yokes, Bull Rings, Grind Stones, Weather Vanes, Hoes, Spades, Forks, Rakes, Garden and Pruning Shears, Knives and Saws, and Garden and Farm Tools of every variety. Also **Fertilizers** of all kinds.

Seed and Implement Price List furnished on application.

Plants, Trees, &c.

I have made arrangements to be constantly supplied in the season with the choicest flowering Plants, Shrubs, Roots, &c. Also with Fruit and Ornamental Trees.

JOHN VANDERBILT,
23 Fulton-street, New-York.

B. K. BLISS'**Illustrated Seed Catalogue
and Guide to the Flower and
Kitchen Garden.**

The ELEVENTH EDITION, with supplement for 1866, enlarged and improved, contains upwards of ONE HUNDRED PAGES of closely printed matter, with many NEW AND BEAUTIFUL ILLUSTRATIONS, and a descriptive list of upwards of TWO THOUSAND VARIETIES OF FLOWER AND VEGETABLE SEEDS, including many CHARMING NOVELTIES, now offered for the first time in this country, with explicit directions for their culture. Also, a list of

**Upwards of One Hundred Varieties of French
Hybrid Gladioli,**

embracing many new varieties not before offered, and other SUMMER FLOWERING BULBS. To which is added a list of a few of the choicest varieties of GRAPES, STRAWBERRIES, RASPBERRIES, and other SMALL FRUITS, BEDDING PLANTS, etc., etc., cultivated at his gardens, with much other useful information upon the subject of Gardening generally, which will be found useful to the experienced amateur as well as those about to commence the delightful occupation of Gardening. In consequence of the very great advance in the cost of paper, printing, &c., we cannot afford it gratuitously (as we have heretofore done), excepting to our regular customers.

A copy will be mailed, post-paid, to all applicants enclosing Twenty-five Cents. Address

B. K. BLISS, Springfield, Mass.

Seeds of Florists' Flowers.

The attention of AMATEURS and FLORISTS is invited to the following list which have been carefully selected from the stocks of several of the most successful European and American growers, and are believed to be superior to any ever before offered in this country. Mailed post-paid, upon receipt of price affixed, to any address in the Union.

	pkt.
ANTIRRHINUM (Snapdragon), finest hybridized,.....	25
ASTERS, TRUFFAUT'S Peony flowered, the finest grown,.....	25
ACRICULA, from the finest prize varieties,.....	25
BALSAMS, Glenn's and Smith's prize, unequalled, each,.....	25
BELLIS PERENNIS, (Double Daisy), a general favorite,.....	25
CALCEOLARIAS, Herbaceous and Shrubby varieties saved from most beautiful spotted and mottled flowers, each,.....	50
CINERARIAS, from the newest and best named sorts,.....	50
COCKSCOMBs producing immense combs,.....	25
CARNATION & PICOTEÉ PINKS, from named varieties, each,.....	50
do perpetual flowering for pot culture,.....	50
GERANIUMS, Scarlet, from finest variegated foliaged vars,.....	25
do from "Bull's superb collections" of all the newest varieties,.....	50
PELAGONIUMS, from finest Eng. and Fr'ch prize flowers,.....	50
GLADIOLI, from a collection of 125 varieties,.....	25
GLOXINIAS, from the finest erect and drooping varieties,.....	50
HOLLYHOCKS, from our own collection of 25 varieties producing flowers fully doubled of every shade of color,.....	50
LANTANA, from named flowers,.....	25
MIMULUS, from the finest new hybridized varieties,.....	25
do New Double flowering "Bulls" the leading novelty of the season, never before offered in this country,.....	1 00
PANSIES, from the finest English show flowers,.....	50
do New Fancy, beautifully edged marbled & variegated,.....	50
do Blue, Yellow, White, Black, Bronze, Striped, Yellow margined; Violet bordered with white; Marbled purple, in separate packets, each,.....	25
(The collection of eleven varieties of Pansies,.....)	\$2 50
PETUNIAS, Double, carefully hybridized by a noted German Florist,.....	25
PETUNIAS, BUCHANAN'S HYBRID, from the finest mottled and variegated varieties,.....	25
PORTULACA, New Double, in many colors, producing flowers as double as Roses, a most desirable acquisition,.....	50
PRIMULA SINENSIS (Chinese Primrose), saved from the finest Chinese varieties, Rose and White, each,.....	50
STOCKS, New German, large flowering, finest mixed,.....	25
do Scarlet and White Intermediate, (Covent Garden varieties), each,.....	25
do New White Wall-flower leaved, fine for pots,.....	25
SWEET WILLIAMS, HUN'S PERFECTION and ACRICULA FLOWERS, beautifully margined, laced and mottled, unequalled for beauty,.....	25
TROPEOLUM, finest hybridized bedding varieties of every shade,.....	25
TROPEOLUM LOBBIAEUM, and its hybrids for green-house culture, many colors mixed,.....	25
WALL-FLOWERS, finest double, much improved,.....	25
The foregoing collection of 46 varieties for.....	\$12.00.

Address B. K. BLISS, Seedsmen and Florist, Springfield, Mass.

**Collections of Vegetable Seeds by Mail.
For Spring Planting.**

15 Varieties, our Selection, \$1.00; 33 Varieties, our Selection, \$2.00; 55 Varieties, in Larger Packets, \$3.50.

The above contain the leading varieties usually grown in our gardens, but who reside at a distance from where they would recommend our collections at \$20.00; or \$15.00; or \$10.00; and \$5.00, which can be safely forwarded by express to all parts of the world. A list of the contents of each collection will be found in our New Catalogue and "Guide to the Flower and Kitchen Garden."

Address B. K. BLISS, Springfield, Mass.

Collections of Flower Seeds by Mail.

For the accommodation of those who love the cultivation of Flowers, but who reside at a distance from where they can be procured, we have selected from our large assortment of Flower Seeds the most showy varieties, and those of easy culture, and put them up in assortments, which will be sent post-paid to any address in the Union at the following prices:

Assortment No. 1—contains twenty choice varieties of Annuals, \$1.00.

Assortment No. 2—contains twenty choice varieties of Biennials and Perennials, \$1.00.

Assortment No. 3—contains ten extra varieties of Annuals and Perennials, embracing many of the new and choicest in cultivation, \$1.00.

Assortment No. 4—contains five very choice varieties, selected from the Prize Flowers of English Pansies, German Carnations, and Picotee Pinks, Verbenas, Truffaut's French Asters, Double Hollyhocks, \$1.00.

Any one remitting \$3.00 will receive the four assortments, postage free.

Assortment No. 5—contains fifteen very select varieties of Green-house Seeds, \$3.00.

Assortment No. 6—contains one hundred varieties of Annuals, Biennials and Perennials, including many new and choice varieties, \$5.00.

Assortment No. 7—contains fifty varieties of Annuals, Biennials and Perennials, \$2.50.

Assortment No. 8—contains twenty varieties of hardy Annuals, Biennials and Perennials, for sowing in the autumn, \$1.00.

B. K. BLISS, Springfield, Mass.

**ANOTHER SPLENDID NOVELTY from
JAPAN.****Striped Leaved Japanese Maize.**

This beautiful and valuable addition to our ornamental foliage plants was obtained in Japan, by Mr. Thomas Hogg, the well-known Nurseryman and Horticulturist, at New York, who sent seeds of it to his brother, Mr. James Hogg, in the spring of 1864.

It appears to be a variety of Zea Chiragua, or the Peruvian Maize, as it in many respects differs from the Zea Mays, or Indian Corn, as it is called in the United States. It grows to a height of from five to six feet, and has its foliage alternately opposite; the foliage is from two to three inches wide and about four feet in length. It is beautifully and evenly striped, or ribboned with alternate stripes of green and white, and in its earlier stages of growth is also striped with rose color. It resembles the Arundo donax variegata in appearance, but is of a much more elegant and imposing habit. Nothing in the way of a foliage plant can exceed in gracefulness and beauty, a group of three to five plants of this variety of Zea. The subscriber is happy to announce that he has secured the entire stock of this splendid novelty, and now offers the seeds in packets containing Twenty Seeds at 25 cts. per packet, 5 packets for \$1. The Trade supplied upon the most liberal terms.

Address B. K. BLISS, Springfield, Mass.

Seeds for the Farm & Garden.

The following seeds, the purity and vitality of which can be confidently recommended, will be mailed, post-paid, to any address in the United States, upon receipt of the price affixed.

	oz.	8 oz.	lb.
BEETS—Early Bassano,.....	15	\$ 60	\$1 00
Early Blood Turnip, Orange Turnip, Long Blood,.....	13	45	80
White Sugar, Long Red, Yellow Globe, Mangold,.....	10	40	75
CABBAGE—Early York, Large York, Battersea,.....	25	1 25	2 00
Early Sugar Loaf (French), Red Dutch Premium Flat Dutch, French Ox Heart, Drumhead, Large Bergen, Stone Masoo, Drumhead Savoy,.....	40	2 75	5 00
Winniestadt, Improved Early Wakefield, Little Pixie, Improved American Savoy, New Dwarf Elm,.....	50	3 50	6 00
Marblehead Mammoth, enormous size, very solid,.....	25		
CALIFLOWER—Half Early Paris, sure to stand,.....	150	9 00	16 00
Early Dutch, London, Asiatic, Walcheren,.....	75	4 50	8 00
Carter's Mammoth, Leuonard, Early Erfurt,.....	25		
CELERY—Seymour's White, Chrystal White Red, solid,.....	35	1 75	3 00
Incomparable Dwarf,.....	25		
Dwarf Imperial, purple,.....	25		
CARROT—Improved Long Orange, extra deep color,.....	20	80	1 50
French Long Orange, White Belgian, Altringham,.....	15	75	1 25
Extra Early Short, Early Horn,.....	20	80	1 50
CUCUMBER—Extra Early Russian, Long Green,.....	25	1 25	2 00
Early Frame, White Spine, Short Green,.....	15	75	1 25
CORN—Extra Early Dwarf Sugar,.....	pt. 25	qt. 10	
Red Lob Sugar, Evergreen, Mammoth Sweet,.....	" 20	" 30	
EGG PLANT—Improved New York Purple, (very large),.....	75		
KOHL RABI—Early White Vienna, Purple, (very large),.....	40	2 75	5 00
LETTUCE—Early Silesia, Summer Cabbage,.....	25	1 75	3 00
Large Indian, Paris Green and White Cos,.....	40	2 25	4 00
MUSKMELON—Green Citron, Nutmeg, Christiana,.....	15	75	1 25
White Japan, extra fine flavor,.....	50	3 00	5 00
WATERMELON—Mountain Sweet, Black Spanish,.....	15	80	1 50
PARSNIP—Long White, Hollow Crown Sutton's Student,.....	15	50	80
PEAS—Extra Early, Dan'l O'Rourke, Tom Thumb, per quart,.....	50		
Champion of England, Prince Albert, per quart,.....	50		
PEPPER—Large Sweet Mountain, extra fine,.....	50	3 00	5 00
RADISH—French Turnip, Olive shaped, Long Scarlet,.....	15	75	1 25
SALSIFY—A Vegetable Oyster,.....	20	1 50	2 50
SQUASH—Round and Prickly,.....	10	50	75
SQUASH—Sun, Crookneck, Early Bash, Boston Marrow, Hubbard,.....	20	1 25	2 50
Canada Crookneck, pure ext. fine, Yokohama, Turban,.....	20	1 25	2 00
TURNIP—Early Flat Dutch, Early Red Top, Large Yellow Globe, Cow Horn, Long White French, Yellow Aberdeen,.....	10	60	1 00
RETBAGA—Skeirving's Purple Top, Laid's,.....	10	60	1 00
SAGE—Summer Savory, Sweet Marjoram, Thyme, Basil, Lavender, etc.,.....	pkt.	10	

No order will be executed at the above rates for less than the amount specified. When smaller quantities are ordered, they will be sent at packet prices. For a more complete list of Seeds with directions for culture, see our Catalogue, and "Guide to the Flower and Kitchen Garden."

Address B. K. BLISS, Springfield, Mass.

New White Dielytra.

Dielytra (Dicentra) Spectabilis alba.

Another year's trial confirms what we have previously said of this charming novelty. Its delicate blossoms, graceful habit, and beautiful foliage, will cause it to become a general favorite, and no garden, however small, will be complete without it. It forms a pleasing contrast with the original variety, and as a decorative plant for the cemetery it stands unrivaled.

Strong and well rooted Pot. Plants will be ready for delivery about the first of April, and will be mailed post-paid to

any address in the Union upon receipt of the price. One Plant, \$1; Six Plants, \$5; Twelve Plants, \$9. A few one year old ground roots for propagation, \$5 each.

Address B. K. BLISS, Springfield, Mass.

CHOICE VARIETIES of the TOMATO.

The following varieties of this valuable esculent will be mailed to applicants upon receipt of the price affixed:

Tilden's New Seedling.—A new and truly valuable variety, oval shaped, the color a brilliant scarlet, skin smooth, glossy, and rarely wrinkled, very productive, an excellent market variety, packet, 25 cents.

Extra Early York., the earliest variety, very prolific, of good size, and fine quality, packet, 15 cents.

The Cook's Favorite.—Fruit of medium size, roundish or oval, smooth, of a rich deep color, fine flavor, very solid and prolific, an excellent market variety, pkt. 15c.

Lester's Perfected., fruit of large size, pinkish red, remarkably solid and of fine flavor, packet, 10 cents.

Mammoth Chihuahua., often weighs 2 and 3 lbs. 25c.

New Erect French, or Tree Tomato., grows upright like a bush, fruit solid and of fine quality, very ornamental, fine for pot culture, packet, 10 cents.

Also, the following varieties at 10 cents per packet:

Early Apple; Pear Shaped; Yellow Plum; Red and Yellow Cherry; Fejee Island; New White; Large Yellow; Strawberry. One packet each of the 15 varieties, \$1.75.

Address B. K. BLISS, Springfield, Mass.

POTATOES FOR SEED.**Goodrich's New Seedlings.**

Early Goodrich.—The experience of many growers the past season has proved this to be the earliest as well as one of the most productive varieties in cultivation.

peck. bush. bbl.
\$1 50 \$3 00 \$12 00

Calico.—A Seedling of the Garnet Chili, a little earlier than that variety, has a firm crisp flesh, cooks white and dry.

peck. bush. bbl.
\$1 00 \$3 50 \$7 50

Gleason.—Of good size, fine grain, white solid flesh, very productive.

peck. bush. bbl.
\$1 50 \$5 00 \$12 00

Garnet Chili.—Large and productive, a good keeper, fine for general crop.

peck. bush. bbl.
75 \$2 00 \$5 00

Cuzco.—White flesh, good size and flavor, and enormously productive.

peck. bush. bbl.
75 \$2 00 \$5 00

Early Stevens.—A new variety from Northern Vermont, extra early, of excellent quality, very productive.

peck. bush. bbl.
75 \$2 00 \$5 00

Extra Early White.—Very early, of large size, flesh very white, fine flavor, a fine market variety.

peck. bush. bbl.
75 \$2 00 \$5 00

Early Sovereign.—A favorite early sort, of good quality, keeps well.

peck. bush. bbl.
75 \$2 50 \$5 00

Early Wendell.—One of the largest of the early varieties, very productive, and uniformly of good quality.

peck. bush. bbl.
75 \$2 00 \$5 00

Delmahoy.—A new second early variety from Ireland, medium size, of excellent flavor, very productive.

peck. bush. bbl.
75 \$2 50 \$6 00

Jackson White.—An excellent second early sort, much cultivated in New England, flesh very white and of fine flavor.

peck. bush. bbl.
75 \$2 00 \$5 00

New White Peach Blow.—A decided improvement upon the well-known "Jersey Peach Blow," flesh white, floury, of most excellent quality, cannot be too strongly recommended, a first rate market variety.

peck. bush. bbl.
75 \$2 00 \$5 00

POTATOES BY MAIL.—For the accommodation of those who reside at a distance from Railroads and Express Offices, we will send a package containing **Four Pounds** of either of the above varieties by mail, post-paid, upon receipt of **One Dollar**. No less than \$1.00 worth or more than one kind in a package will be sent by mail, 6 P's for \$5.

Address B. K. BLISS, Springfield, Mass.

PRIZE CUCUMBERS FOR FORCING.

General Grant.—A new and superb variety either for exhibition or the table perfect in form, solid and crisp, and of a most agreeable flavor. Many specimens were grown the past summer averaging 24 to 30 inches in length. It succeeds well also in the open ground. Packets containing 10 Seeds, 25 cents. Also the following English and German varieties, at 25 cents per packet. Ayre's Perpetual Black Spine; Cathill's Black Spine; Ipswich Standard; Weeden's Spine; Cathill's Black Spine; Giant of Armstadt; Roman Symmetry; Victory of Bath; Giant of Armstadt; Roman Emperor; Minister-Abbey; Lord Kenyon's Favorite; Ne Plus Ultra; Caster's Champion; Colney Hatch. Either of the above varieties will be mailed to applicants upon receipt of price affixed. Address B. K. BLISS, Springfield, Mass.

NEW CROP ONION SEED.

The following varieties will be mailed post-paid, during the months of January and February, upon receipt of the prices affixed: Prices for larger quantities upon application.

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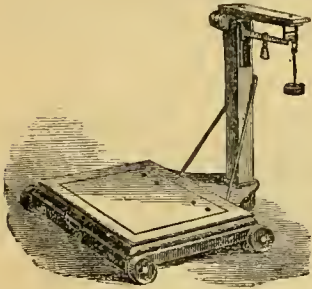
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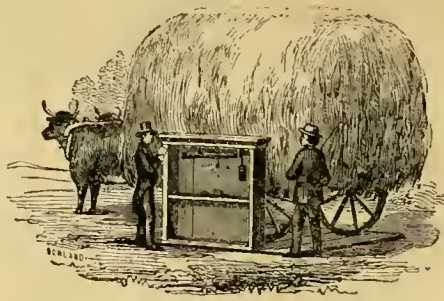
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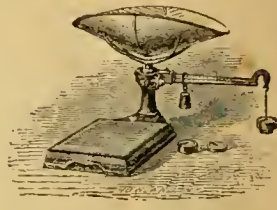
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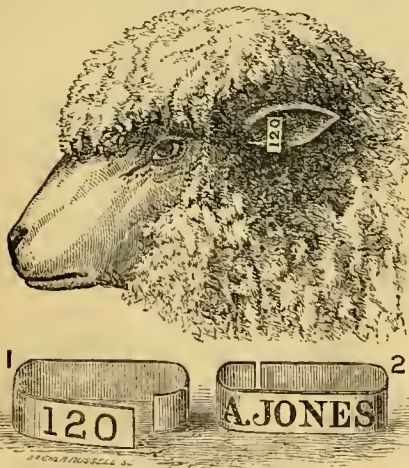


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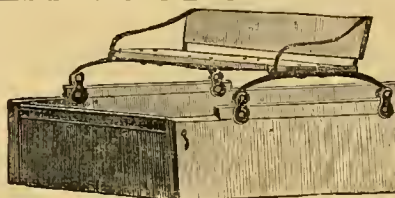
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Pre-eminently the first in the list of grain-exporting States, Illinois is also the great cattle State of the Union. Its fertile prairies are well adapted by nature to the raising of cattle, sheep, horses and mules; and in the important interest of pork packing, it is far in advance of every other State. The seeding of these prairie lands to tame grasses for pasturage or hay, offers to farmers with capital the most profitable results. The hay crop of Illinois in 1864 is estimated at 2,166,725 tons, which is more than half a million tons larger than the crop of any other State, excepting only New York.

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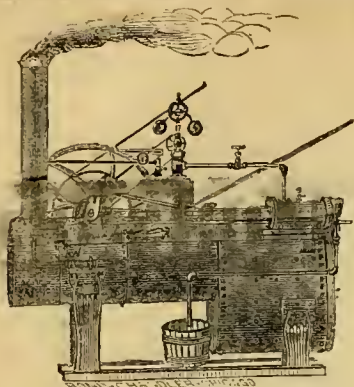
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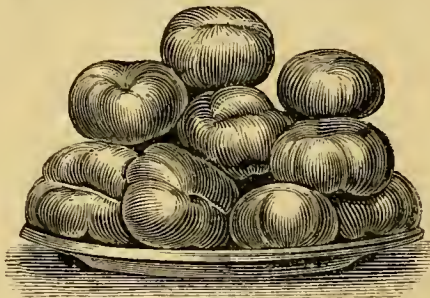
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[Northern Independent.

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[Republican, Red Wing, Minn.

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[Daily Press, Louisville, Ky.

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[New Era, Fort Smith, Arkansas.

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ters, not to use THE TRIBUNE as an advertising medium, or if they do, to be a little more liberal than I was, and pay for a few more particulars. Had I done so, much trouble might have been saved. For instance, by merely saying my place was small, or specifying the number of acres, many who wrote letters would have been saved the trouble of writing, and I should have escaped a great many inquiries and saved trouble and expense. I would not, if to do again, spare words.”

B. W. STEERE, Adrian, Mich.

BROOKLYN, 26th Dec., 1865.

TO THE PUBLISHER OF THE NEW-YORK TRIBUNE,
 Dear Sir,—In November last, I wrote an article headed, “Ho, for Tennessee,” which was a description of the Cumberland Table. It was published in THE NEW-YORK DAILY TRIBUNE of Nov. 25th, and again in the SEMI-WEEKLY issue of Nov. 28th. The object of the article was to call the attention of your readers to the advantages of that location, more particularly so as concerned men of small means, and those who were suffering from ill health, two classes which my benevolence led me to wish to benefit. I did not write that article because I had, or expected to have land for sale, but because I believed many would thank me for the information thus communicated; yet, although I had no land for sale, I knew of those who had, at a moderate price, and perfect title, and was convinced that every man who bought of it might be benefited thereby. Not feeling justified in withholding my information from the public, I prepared and inserted an advertisement in three of the leading newspapers of New-York City, in which I promised to give definite information concerning the Cumberland Table of Tennessee, to any person who should apply to me for it, personally, or by letter. That advertisement appeared several times in each of the journals alluded to, of which THE N. Y. TRIBUNE was one. As a matter of justice to your own journal allow me to state the result—from the readers of each of the other two alluded to, I have had two applications—from readers of the TRIBUNE I have had so many that I found it utterly impossible to write answers to them, even by devoting my time from early morning until midnight of each day, six days in the week, and that I might fulfill the promise made in my advertisement, was compelled to print nearly all that I desired to say to applicants, by which course, with unremitted industry on my part, I have been able to fulfill my promise. Applications come to me every day from readers of the TRIBUNE, from Maine to Minnesota, inclusive, and the interest which has been excited does not seem to abate in the least degree.

If the N. Y. TRIBUNE, viewed as an advertising medium, for such an object has so great advantages over others, I think it but fair and just to yourself, and the Public, that it should be made manifest—you are therefore at liberty to make any use of this communication which you think proper, as it is simply a statement of facts made voluntarily for the benefit of all concerned.

Yours, Very Respectfully,

W. W. POWELL,

76 Court-st., cor. State, Brooklyn, N. Y.

Drafts on New-York, or Post-Office Orders, payable to the order of THE TRIBUNE, being safer, are preferable to any other mode of remittance. Address

THE TRIBUNE,
 NEW-YORK.

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Peas.

	per quart.	per p'kt.
Extra Early Daniel O'Rourke.....	\$ 50 cts.	10 cts.
Extra Early Tom Thumb.....	80 "	10 "
Early Kent.....	35 "	10 "
Blue Imperial.....	50 "	10 "
Champion of England.....	50 "	10 "
Black Eyed Marrowfat.....	30 "	10 "
White Marrowfat.....	30 "	10 "

Beans.

Early Yellow Six Weeks, Bush.....	50 "	10 "
Early Newington Wonder, ".....	50 "	10 "
Refugeo, or 1000 to 1, ".....	50 "	10 "
Large White Lima, Pole.....	75 "	10 "

Artichoke.

	per oz.	per p'kt.
Green Globe.....	60 cts.	10 cts.

Asparagus.

Giant Purple Top.....	10 "	5 "
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Beet.

Extra Early Turnip.....	10 "	5 "
Early Blood Turnip.....	10 "	5 "
Long Smooth Blood.....	10 "	5 "
Blue Apple.....	20 "	5 "
Swiss Chard, or Silver.....	15 "	5 "
White Sugar, or Silesian.....	10 "	5 "
Long Red Mangel Wurtzel.....	10 "	5 "
Red Globe.....	10 "	5 "
Long Yellow.....	10 "	5 "
Yellow Globe.....	10 "	5 "

Broccoli.

Early White.....	60 "	10 "
Early Purple.....	60 "	10 "
Early Purple Cape.....	75 "	15 "
Early White Cape.....	1 00 "	15 "
Early Walcheren.....	1 00 "	15 "

Brussels Sprouts.

Fine Imported.....	30 "	10 "
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Cabbage.

Early Dwarf York.....	25 "	5 "
Early Large York.....	25 "	5 "
Early Wakefield.....	25 "	5 "
Early Ox Heart.....	25 "	5 "
Early Winningstadt.....	50 "	10 "
Early Drumhead.....	25 "	5 "
Early Battersea.....	25 "	5 "
Early Sugar Loaf.....	25 "	5 "
Large Late Bergen.....	40 "	10 "
Stone Mason.....	40 "	10 "
Large Late Drumhead.....	40 "	10 "
Premium Flat Dutch.....	40 "	10 "
Green Globe Savoy.....	25 "	5 "
Drumhead Savoy.....	25 "	5 "
Green Glazed.....	25 "	5 "
Red Dutch Pickling.....	25 "	5 "

Carrot.

Early Scarlet Horn.....	15 "	5 "
Long Orange.....	15 "	5 "
Large Altringham.....	15 "	5 "
Long Blood or Purple.....	15 "	5 "
Large White Belgian.....	10 "	5 "

Cauliflower.

Early Paris.....	1 00 "	15 "
Half Early Paris.....	1 00 "	15 "
Early Loucon.....	75 "	15 "
Early Walcheren.....	75 "	15 "
Large Asiatic.....	75 "	15 "

Celery.

Early White Solid.....	30 "	5 "
French, Self Blanching.....	30 "	5 "
Early Red Solid.....	30 "	5 "
Turnip Rooted, Celerialo.....	30 "	5 "

Chervil.

Curled or Double.....	30 "	5 "
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Corn Salad.

Round Leaved.....	10 "	5 "
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Cress.

Curled or Pepper Grass.....	10 "	5 "
Broad Leaved.....	10 "	5 "

Collards.

English.....	15 "	5 "
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Cucumber.

Early Russian.....	15 "	5 "
Early Short Green.....	15 "	5 "
Early Green Cluster.....	15 "	5 "
Early White Spined.....	15 "	5 "
London Long Green.....	15 "	5 "
Extra Long Green Turkey.....	25 "	5 "
Gherkin or Burr.....	40 "	5 "

Corn.

	per quart.	per p'kt.
Early Sweet nr Sugar.....	\$ 30 cts.	10 cts.
Large.....	30 "	10 "
Evergreen.....	30 "	10 "

Egg Plant.

	per oz.	per p'kt.
Early Long Purple.....	60 "	10 "
Improved Large Purple.....	1 00 "	15 "

Endive.

Green Curled.....	35 "	5 "
White Curled.....	35 "	5 "
Broad Leaved.....	30 "	5 "

Kale.

Green Curled Scotch.....	25 "	5 "
Purple Curled.....	25 "	5 "
German Brown Curled.....	25 "	5 "
Dwarf German Greens.....	15 "	5 "
Sea Kale.....	30 "	5 "

Kohl Rabi.

Early White Vienna.....	40 "	5 "
Large Green or White.....	25 "	5 "
Large Purple.....	25 "	5 "

Leek.

Large Flag, or Scotch.....	30 "	5 "
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Lettuce.

Early Curled Silesia.....	25 "	5 "
Large White Cabbage.....	25 "	5 "
Royal Cabbage.....	25 "	5 "
Imperial Cabbage.....	25 "	5 "
Ice Drumhead.....	25 "	5 "
Butter—very fine.....	25 "	5 "
Brown Dutch.....	25 "	5 "
Hardy Green.....	30 "	5 "
White Paris Coss.....	30 "	5 "
Green Paris Coss.....	30 "	5 "

Martynia.

For Pickles.....	30 "	5 "
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Musk Melon.

Early Jenny Lind.....	15 "	5 "
Early White Japan.....	30 "	5 "
Early Christiana.....	15 "	5 "
Skillman's Fine Netted.....	15 "	5 "
Pineapple.....	15 "	5 "
Green Citron.....	15 "	5 "
Large Nutmeg.....	15 "	5 "

Water Melon.

Mountain Sweet, or Ice Cream.....	10 "	5 "
Mountain Sprout.....	15 "	5 "
Black Spanish.....	15 "	5 "
Goodwin's Imperial.....	30 "	5 "
Apple Seeded.....	30 "	5 "
Cliton for Preserves.....	30 "	5 "

Mustard.

White or Yellow.....	10 "	5 "
Black or Brown.....	10 "	5 "

Nasturtium.

Tall (Indian Cress).....	25 "	5 "
Dwarf.....	35 "	5 "

Okra.

Long Green.....	15 "	5 "
Dwarf White.....	15 "	5 "

Onion.

Extra Early Red.....	25 "	10 "
Large Red Wethersfield.....	20 "	5 "
Large Yellow Dutch.....	20 "	5 "
Yellow Danvers.....	20 "	5 "
White Portugal.....	40 "	5 "

Parsley.

Curled or Double.....	10 "	5 "
Plain or Single.....	10 "	5 "
Hamburg or Rooted.....	15 "	5 "

Parsnep.

Long Smooth White.....	10 "	5 "
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Pepper.

Large Squash.....	50 "	10 "
Large Bell or Bull Nose.....	50 "	10 "
Long Cayenne.....	50 "	10 "
Sweet Mountain.....	50 "	10 "
Sweet Spanish.....	50 "	10 "
Red Cherry.....	50 "	10 "

Pumpkin.

Large Cheese.....	10 "	5 "
Mainmoth.....	20 "	5 "
Cushaw.....	10 "	5 "
Seven Year.....	40 "	5 "
Connecticut Field.....	10 "	5 "

Radish.

	per oz.	per p'kt.
Long Scarlet Short Top.....	15 cts.	5 cts.
Early Scarlet Olive Shaped.....	15 "	5 "
Early Scarlet Turnip.....	15 "	5 "
Long Salmon.....	15 "	5 "
Long White Naples.....	15 "	5 "
White Summer Turnip.....	15 "	5 "
Yellow.....	15 "	5 "
Grey.....	15 "	5 "
Purple.....	15 "	5 "
Black Spanish.....	15 "	5 "
Scarlet Chinese Winter.....	25 "	5 "

Rhubarb.

Myatt's Victoria.....	20 "	5 "
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Salsify.

Vegetable Oyster.....	25 "	5 "
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Scorzonera.

Black Salsify.....	25 "	5 "
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Spinach.

Round Leaved.....	10 "	5 "
Prickly Seeded.....	10 "	5 "
Large Flanders.....	10 "	5 "
New Zealand.....	25 "	5 "
Lettuce Leaved.....	10 "	5 "

Squash.

Early Golden Bush.....	10 "	5 "
Early White Bush Scallop.....	10 "	5 "
Green Striped Bush.....	10 "	5 "
Summer Crookneck.....	10 "	5 "
Winter Crookneck.....	10 "	5 "
Boston Marrow.....	15 "	5 "
Hubbard.....	20 "	5 "
Lima Cocoon.....	15 "	5 "
Honolulu.....	30 "	5 "

Tomato.

Extra Early Red.....	30 "	5 "
Large Smooth Red.....	25 "	5 "
Fejee Island, Pink.....	30 "	5 "
Lester's Perfected.....	30 "	5 "
Large Yellow.....	30 "	5 "
Pear Shaped.....	30 "	5 "
Red Cherry.....	35 "	5 "
Yellow Cherry.....	35 "	5 "
Cook's Favorite.....	75 "	10 "

Turnip.

Early White Flat Dutch.....	10 "	5 "
Early White Stone.....	10 "	5 "
Red Top Strip Leaved.....	10 "	5 "
Large White Globe.....	10 "	5 "
Large White Norfolk.....	10 "	5 "
Yellow Stone.....	10 "	5 "
Yellow Aberdeen.....	10 "	5 "
Orange Jelly.....	10 "	5 "
Robson's Golden Ball.....	10 "	5 "
Long White French.....	10 "	5 "
Purple Top Ruta-Baga.....	10 "	5 "
Silvering's Improved Ruta-Baga.....	10 "	5 "
Marshall's.....	10 "	5 "
White Ruta-Baga.....	10 "	5 "

Herb Seeds.

Anise.....	15 "	5 "
Borage.....	25 "	5 "
Balm.....	40 "	5 "
Bene.....	25 "	5 "
Coriander.....	10 "	5 "
Caraway.....	10 "	5 "
Dill.....	15 "	5 "
Horehound.....	75 "	10 "
Hyssop.....	75 "	10 "
Lavender.....	50 "	10 "
Pot Marigold.....	30 "	5 "
Rosemary.....	75 "	10 "
Saffron.....	15 "	5 "
Sage.....	30 "	5 "
Summer Savory.....	20 "	5 "
Sweet Marjoram.....	50 "	10 "
Sweet Fennel.....	15 "	5 "
Sweet Basil.....	50 "	10 "
Tansy.....	75 "	10 "
Thyme.....	50 "	10 "
Winter Savory.....	30 "	5 "
Wormwood.....	75 "	10 "

CONSIGNMENTS

of Peas, Beans, Flax Seed, Beeswax, Hair, Feathers,

Ginseng, Dried Fruits, etc., are respectfully solicited by

JAMES SHEPPARD & CO.,
Seed and Commission Merchants,
214 Pearl Street, New York.

AMERICAN AGRICULTURIST,

FOR THE

Farm, Garden, and Household.

"AGRICULTURE IS THE MOST HEALTHFUL, MOST USEFUL, AND MOST NOBLE EMPLOYMENT OF MAN."—WASHINGTON.

ORANGE JUDD & CO.,
PUBLISHERS AND PROPRIETORS
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VOLUME XXV—No. 3.

NEW-YORK, MARCH, 1866.

NEW SERIES—No. 230.



TERRIERS.—FROM A PAINTING BY BEARD, ENTITLED "GUARDING THE PRISONERS."—Engraved for the American Agriculturist.

We have had permission to copy this spirited picture, exhibiting in one group three of the most valued breeds of terriers, namely: the Scotch, the Black-and-tan and the Bull. These little dogs combine many good qualities, and their instinct is so strong for pursuing small animals,—woodchucks, rabbits, weasels, rats,—that they usually entirely ignore birds, and follow their game only upon the ground or in their burrows, whence they derive the name terrier, from *terra*, the earth. The characteristics of the terriers are great intelligence, pertinacity, pluck, watchfulness, faithfulness, vivacity and affection. They are especially useful to farmers and others, as indoor guards, stable dogs, and ratters; they may also be

trained to drive sheep and cattle, but are rather small for this purpose, except perhaps the Bull terrier, which was originally a cross between the Black-and-tan or "English terrier" and the Bull dog. These dogs, Bull terriers, are, however, too "sharp" and pugnacious. Their jaws are very strong, their bite savage, and as they are large enough to kill sheep, we can hardly recommend them. The white dog is of this breed. The Scotch terrier is a shaggy, wirey-haired, yellow or ash-colored, active, sprightly animal, usually weighing 20 to 35 pounds. It possesses in a high degree all the good qualities of the Terriers, and is, perhaps, most uniformly the best ratter. One of these dogs, trained, will often kill 100 rats in 7 minutes, and a pair of them

in a barn will usually clear out the rats in the space of a few days. The Black-and-tan terrier is usually black, with tan spots over the eyes and tan colored legs; perfectly smooth, clean limbed, round barrelled, and handsome. As a guard, ratter, and companion, he is just about as good as his shaggy comrade, and is so much neater and easier kept clean, that he makes the more agreeable house dog. Two such dogs, one kept in the barn and the other in the house, are great protection, for if prowlers come about, they will be sure to communicate with one another. A big dog, out of doors, is coaxed or poisoned easily.—Mr. Jas. H. Beard, whose painting of animals are remarkable for their expression, is the artist of this picture.

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Club Additions.—To Clubs of subscribers at club prices, additions can be made at any time at the same prices, if the additions begin at the same time as the others.

AMERICAN AGRICULTURIST.

NEW-YORK, MARCH, 1866.

The first month of the spring is the last of the winter in many places, and of all the months in the year, not only is March the most variable, but none has such different characters in various localities. At the South the woods are full of blossom. The yellow jessamine hangs in festoons from the trees, or wreathes the hedge-rows and blackened stumps in the cleared grounds, with golden chaplets, while the purple flowers in the wild land reflect the color of the peach blossoms about the plantations, where gardening is the order of the day. Horses and cattle there are luxuriating in the cane brakes, the young shoots of which form so palatable feed before the grasses are sufficiently forward—this, while the frozen North is still held in icy fetters, Maine woodsmen are felling their timber upon 3 or 4 feet of snow, or just beginning the sugar season; but all around our larger towns and cities, as soon as the snow leaves the ground bare and we have a few days of sunshine, the market gardeners show great activity. The sun is reflected from the bright sashes of thousands of frames, and the patches of green spinach and parsnips, and the blue salsify brighten up under the spring-tide influences, and soon yield their crops of roots or leaves to the ever-hungry market.

Hints about Work.

Following the natural order of things, farmers generally plan to have the increase of their flocks and herds take place chiefly in the spring time, and the careful herdsman gives especial attention to animals heavy with young.

Brood Mares that will foal this spring, if worked, should be driven with caution, never overheated, nor put to their speed, nor given drink when hot, nor lack water when thirsty. Light work will not hurt them, even before the plow and harrow. If not worked, give them good room. See hints in January and February. It is equally important that

Milk Cows, soon to calve, should not be too much confined in stables. Exposure to the weather when it is not wet, in dry yards and lawns where they can take some exercise, but not where they will be subject to the annoyance of quarrelsome cattle, will be of essential benefit to them. If their stables are kept scrupulously clean and sweet, and they have good feed of hay and some roots, they will pass this critical period successfully. Cows very near their time, may be recognized by their distended udder, and such should be placed every night in well littered box stalls. Should the bag become hard, tender, and feverish before calving, it is sometimes necessary to draw the milk, and rub and wash the bag with warm suds, and perhaps with diluted tincture of arnica. Use the same treatment after calving if necessary. It is often desirable to milk young cows for some weeks or months after calving, three times a day (once in about 8 hours), so that the tendency to milk secretion shall be increased in every way; for the same reason give succulent food, mashes of oil-cake and bran, and plenty to drink. Steaming the fodder is also well.

Calves.—When calves are to be brought up by hand, which is the economical way, we are decidedly of the opinion that it is the most humane practice to remove the young animal from the dam at once; the more the cow has to do with it, the harder will be the parting. When provision has been made for having enough roots for new milk cows to take the place of grass, it is very desirable to have the calves dropped early. As veal, they are much more valuable, and if they are to be raised, they are able to take care of themselves in the pasture much earlier, and require little care when other farm labors are pressing.

Sheep and Lambs.—It is on the whole seldom desirable to have sheep yean very early. Yet early lambs of the mutton breeds meet with a quick market and high prices at green-peas time, and when such flocks have first-rate care, it is not un-

common that the male lambs pay all the expenses of the flock, leaving the wool and the ewe lambs clear profit. Mutton sheep should have their daily feed of grains and roots increased. Ewes that will soon yean, ought to be separated from the flock, and given dry comfortable quarters, and an extra allowance of roots, peas or beans.

Working Oxen and Steers that have not been much used this winter, must be gradually accustomed to hard labor. There will be light work enough that may be distributed among them, to get their necks toughened and the muscles and wind strengthened before the hard labor of plowing and harrowing comes on. Oxen scarcely less than

Horses, and indeed all animals shedding their coats, should be thoroughly and carefully curried and brushed; it greatly promotes health and good looks, and makes the feed go further. Work horses should be exercised daily by doing some work. There is wood to saw, straw to cut, clover seed to clean, or there may be other machine work to do. Such work ought to be kept along for the good of the teams, and not dashed off at one grand "sput," crowding the teams and wearying them in their present condition, fitly demoniated "soft."

Painting may be done in dry weather to excellent advantage, because there is little or no dust flying, the sun cracks are not gapping open as in summer; they will be covered more smoothly, and there is less liability of the heat of the sun blistering the half-dry paint; surfaces to be painted must be thoroughly dry, however, or paint will be apt to peel.

Repairing.—In the lull of other work, which a cold snap, or rain may occasion, the time may well be employed in making alterations or repairs in the barns and out-buildings, or in preparing to do so when the cattle are at pasture, and the mows and bays are clear of fodder.

Manure may be hauled with much less labor to both men and beasts, on runners than on wheels. So it will often pay well, though a little of the value of the manure may be lost, to haul out that destined for the most distant fields, where it is to be plowed in as soon as the frost is out. We do not believe in top-dressing with animal manures in the spring. Plaster, ashes and bone may be applied very well, but even these are better put on in the autumn. Leave the manure in compact heaps, spread it when the frost is coming out of the ground, but not where it is wet, or springy, or liable to wash away. The present is a good time to prepare

Compost Heaps for corn, etc.—Use muck, if you have it, with any good yard manure, mingling with it any manures you can find, as the waste of factories, breweries, chandleries, etc. The lime and similar alkaline wastes should not be mixed with animal manures, or with others containing nitrogen, unless great quantities of muck or soil are used.

Seed, Grain, etc.—See articles in the present and in the January number on this subject. The careful selection of seed for other crops is equally important, and not less so the early preparation for raising a good supply of seed, which, after a little experience, may be made very profitable, for there is almost always a quick sale for reliable seeds of all kinds.

Field Work.—There is work enough in the meadows and pastures at this season when the ground is loosened by the frost; stones may be raised, picked up and hauled off, or thrown in heaps; fences righted up, and the posts reset or renewed. Furrows should be plowed to draw off surface water, and water furrows in grain fields opened anew. Wherever

The Wash of the Highways can be turned upon the meadows and pastures it should be secured, and when the current is not very strong, or may be easily spread, it is very valuable on any land. This is especially true of snow-water.

Delays often happen which cannot be guarded against, but these are few compared with those which come from our own ignorance, indolence, or misjudgment. When the land is fit to plow, then is the time; before that, there are a thousand and one things to be done, and which may just as well be done before, and a great deal better.

Winter Grain is often greatly benefited by a light dressing of some fertilizer. Where gas-house liquor (ammoniacal water) can be obtained, if it can be showered upon the grain from a liquid manure distributor, like a city watering cart, it produces excellent effects both upon grain and grass, as do likewise ashes and plaster, either or both; bone-dust also, and superphosphate of lime, if good.

Grass Seeding, if done well, will be successful; use a little more than enough seed, and have the ground well prepared. On grain it should be sowed while the ground is still loose and open from the escaping frost. In either case roll after sowing.

Weeds.—At this season, in meadows and pastures, and along the fence rows a great many of the biennial weeds may be easily seen and destroyed. A few men and boys armed with what we have heard called "spuds," which are strong sticks tipped with chisel-like, steel points, will cut up a great many mulleins, teasles, thistles, docks, etc.

Work in the Horticultural Departments.

The time for planning has well nigh passed, and the lengthening and milder days indicate that work may now soon begin in earnest. If there be any who intend to plant, and have not ordered their trees, or who intend to sow and have not yet looked after their seeds, we counsel them to do it forthwith. Do not order every novelty that is advertised or noticed in the papers, but let the main selections, whether for fruit, vegetables, or flowers, be of established sorts, with only a few of the newer things for a trial. Better plant a dozen sorts of apples or pears, known to succeed in your neighborhood, than fifty sorts known only by report. We do not at all object to the trial of new things, but encourage those who have the means to test them, and fortunately there are plenty of such, who are ready to pay any price for a novelty. But to those who wish trees for fruit, vegetables for the table, and flowers for enjoyment, and whose space and means are both limited, we advise caution and moderate investments in unknown things.

Orchard and Nursery.

As soon as the frost will allow, the nurseryman takes up his young trees and heels them in, ready to fill orders. Buyers are apt to judge of the tree by the top, and more is the pity. A small clump of roots is readily taken up, is easily packed, and to the majority of people answers as well as a large mass of unmutilated roots. A moderate shortening of the roots would not be of so much consequence, if the purchaser would only cut back the top to correspond. Most of the buds will produce leaves; every leaf increases the evaporating surface, and if this is out of proportion to the absorbing surface of the roots, the consequence is that each bud shows a sickly tuft of leaves, makes no growth, and if the tree does not die outright, it might as well, for it will be a long time in recovering. The moral of all this is,

Prune at Planting, not only to keep matters square between root and leaf, but also to shape the tree. Get all the roots that the nurserymen can be induced to give, trim all that have been severed, with a smooth cut sloping from below upwards, then shorten at least half of last year's growth. Do not look upon a young tree for what it is, but what it will be when the buds have grown to limbs. The last bud left on the limb will become the leader, and it should point outward, or to the right or left, as is needed to shape the tree, but seldom, or never, inward. If necessary to cut two or three buds below the one preferred, in order to find one that points in the right direction, do it. Cut near to, but not too close to the bud, and never leave a stub above the bud, to decay. Also cut out all useless branches, and those which will cross. Have every thing in readiness to set out trees as soon as they arrive. As soon as the ground is settled and can be worked, set out

Cuttings of currant, gooseberry, quince, etc. Crowd the earth well around the base of the cut-

tings. Where rabbits and mice are plenty, there will frequently be

Girdled Trees, which a little timely care will save. If the inner bark is not entirely destroyed, put on a generous plaster of cow dung and clay, and bind it there with old cloths; but if the girdling is completely made through to the wood, then small twigs, of the same kind, may be used to bridge over the space. The twigs are to be somewhat longer than the girdled band, whittled to a thin chamfer at each end, and inserted under the bark both above and below the wound, in a cut made as for budding. As many may be inserted as can be without too much injury to the bark. Tie securely, put on grafting wax or clay, and shorten the limbs. It is at the North too early to do

Grafting, but cions may be cut as heretofore directed, and grafting wax or clay made ready. If the eggs of the tent caterpillar have not been attended to, read what was said in January under

Insects, and see how many rascals can be tipped in the bud, or egg, which is practically the same.

The Trunks of old orchard trees may be treated to the soft soap wash, as suggested in February. Home-made soap is better than "boughten," and ley or a solution of 1 lb. of potash to 4 gallons of water may be used instead. In these warm days of March the moths which are the parents of the

Canker Worm ascend the trunks. Whatever protection is used, its value depends upon being well applied, and carefully looked after. If there is any space between the protection and the tree, the insects will find it and pass through. If tar be used, it must be kept fresh and sticky. If tongs containing oil, see that neither dust, straws, nor dead insects form a bridge to travel over. The protector of Mr. D. Lyman is simple and readily constructed; it was figured in December last.

Stocks budded last fall, may be cut to within 3 inches of the bud, provided that appears to be alive.

Fruit Garden.

To those who propose to set a portion of ground apart for a fruit garden, we say, if the land is not properly prepared, better wait until autumn before planting small fruits, and devote the season to fitting it for their reception. Drainage is usually needed. Deep working and manuring can both be accomplished by growing some highly manured hoed crop. Sweet potatoes require a treatment that will leave the land in excellent condition. Autumn planting is for many things preferable. One of the first things needing attention is the

Grape Vines, which in the autumn pruning had an extra bud left; these buds may now be cut away. Plant new vines as early as the soil is fit, and whatever style of pruning may be adopted, allow only one cane to grow from a young vine the first year. When the season is sufficiently advanced, uncover the vines that have been protected by a coating of earth, by lifting them with a fork.

Grape Cuttings of those varieties that will root readily in the open ground, are to be put out as soon as the soil has settled. Make a trench with the spade, deep enough for the cuttings, set them 4 inches apart, press the earth firmly about their lower ends, and fill up the trench so that the upper bud of the cutting will be just at the surface, or but slightly covered. Cuttings of

Currants and Gooseberries are treated the same; the bushes may still be pruned, and cuttings used.

Blackberries and Raspberries should be taken up early, as the young shoots are easily destroyed when they have made much growth. Prepare beds for

Strawberries, using old manure, and be ready to set them as soon as plants can be had.

Dwarf Pears and Apples are the largest trees allowable in the fruit garden proper, and these should be kept as compact bushes or pyramids. To get trees perfect in form, they must be taken only a year from the bud, or graft, and they can then be kept perfectly under control. See article on this subject with illustrations in January, 1865.

Kitchen Garden.

One of the things to which especial attention must be given this month, is the forwarding of plants under glass for transplanting as soon as the weather serves. Small operations may go on in window boxes, as described in February on page 62; but the hot-bed or cold frame will be needed by many. The apparatus in both cases is the same, and sufficient directions for its construction were given last month. Those who hesitate about the expense should remember that in all closely settled communities there is a demand for early plants, and the expense of fixtures may soon be defrayed by the sale of cabbage, tomato, pepper, and other plants. Mr. Henderson, on another page, shows how market gardeners manage with their sashes. Cold frames will do in most cases instead of hot-beds, but to get earliest results with many plants,

Hot-beds must be used. The position of the bed is of importance; the ground should be dry, easy of access from the house, and, above all, sheltered from cold winds by a fence or building—the exposure being South-east or South. Supposing the frame and sash are ready, and that one has a generous heap of stable manure, long and short together, already deposited near the site of the bed—with a fork, take the manure from the heap and build it up into another, close along side of where the first one stood. Shake out the lumps and mix long and short together as equally as may be, and if it appears dry, wet it as the heap is built up. Build up the pile in a regular cone, and if the weather is cold, lay some boards, corn-stalks, or other material against it, to keep in the heat. In three or four days thrust a stick into the center of the heap, and if it feels quite warm when withdrawn, repeat the operation of rebuilding the pile. In this second turning over, endeavor to bring the manure that was outside, to the inside of the heap. If the manure heats up well, in three or four days it is ready to make the bed, but if not, then turn it again and continue to do so until the whole is brought into a state of active fermentation. The bed is built wholly above ground, or partly in an excavation. When the ground is well drained, make an excavation a foot in depth and one foot larger each way than the frame. Drive stakes, 3 feet high, at the corners of the excavation, and then put in the manure, a forkful at a time, distribute it evenly, and in layers, beating each layer down with the back of the fork. As the manure is piled above the surface, keep the edges even, and be careful to have the mass equally compact throughout. The bed of manure is made from two to three feet in thickness, and the heat will be more gradual and lasting, if one-fourth to one-half its bulk of forest leaves be mixed with the manure. For a bed above ground, drive the stakes and build up the manure in the same manner. Put on the frame, and place in it about six inches of good light, rather sandy soil, put on the sash and rake off the edges of the bed of the manure to remove loose straw. The next day the heat will probably be so great that the finger, when thrust into the earth, cannot be held there for a long time. Raise the sashes during the day, but close at night, and when the heat is steady at about 75°, sow the seeds in drills about 3 inches apart. Cabbages, cauliflowers, etc., may go under the same sash, and egg plants, tomatoes, peppers and other things, requiring more heat, may be put together. Keep the bed from becoming overheated, by lifting the upper end of the frame, and securing it by a block. When the plants are up, they must be aired in the day time and be kept from burning by the sun, or from getting too dry. Where only a gentle heat is needed, a foot or so of fermenting manure may be placed in an excavation, the frame placed over it, and earth put upon the manure to receive the seeds. Tomatoes, egg plant, winter cherry, and peppers need more heat than do cabbage, cauliflower, lettuce, celery, etc.

Inverted Sods are very convenient for all plants difficult to remove. Cut a tough sod in pieces about 3 inches square, place these in the hot-bed or cold frame, grass side down, and sow cucumbers, melons, early squashes, and Lima beans on the

earth side. When the plants are removed, they are set out with the sod, and the roots are not disturbed.

Early Crops of hardy things may be sown in a sheltered border, such as beets, carrots, radishes, cress, and turnips. By all means have a

Seed Drill, if the garden is large. They are made to sow seeds with satisfactory regularity and save much back-ache. For laying out drills a

Marker, made like a coarse rake with wooden teeth, is useful. There may be several with teeth 12, 15 and 18 inches apart, or one with adjustable teeth.

Winter Covering over asparagus, spinach, etc., may be removed whenever the weather will allow. Rake the coarse manure from the asparagus and rhubarb beds, and fork in the finer portions.

Soil should never be worked when it is wet. Wait until it will crumble when forked. If any part of a garden is slow in coming to this condition,

Drains are needed. All gardens should be drained, but wet ones are eminently in need of it.

Rhubarb may be forced, as directed last month. Make new plantings early, before growth begins.

Leeks may be sown in rich soil in rows a foot apart.

Onions, of the potato variety, may be put out. The small sets are put about 4 inches apart in 15-inch rows, and if cold, throw over a little litter.

Parsley and Celery for early, sow in a cold frame.

Parsnips and Salsify may be dug for use.

Flower Garden and Lawn.

Many of the things indicated last month will lap over into the present one. If the grass of the lawn did not have a top-dressing in autumn, put on one of rich compost, early in the season, and reseed thin places. Happy is he who last fall planted generously of bulbs, for he now is rewarded by a sight of the green spires of the Crocus, and the Snow-drop and Hyacinth are full of promise, if not present enjoyment. Continue the

Pruning of Shrubs, as suggested last month, and as soon as the soil can be worked, take up and divide such clumps of

Herbaceous Perennials as have become too large. The Irises, herbaceous Spiraeas, Dicentra, Columbines, Phloxes, etc., are apt to increase so that they take up too much room, and do not flower as well as smaller plants. Set the divided roots as needed, and be generous with the surplus and give them to less fortunate neighbors.

Hardy Annuals, such as Candy-tuft, Larkspur, and all that are known to come readily from self-sown seeds, may be sown as early as the frost will allow. For plants of the choicer

Tender Annuals, provision must be made by sowing in boxes in the dwelling, or green-house, or in a hot-bed, if wanted early. Cannas, Cypress Vine, and sub-tropical things generally, need considerable heat to forward them rapidly.

Flowering Shrubs of all the hardy kinds, roses included, do best if planted early, but roses that have been started in pots, must not be put out yet. The number of flowering shrubs is so large that we must refer to the catalogues for names. For early flowering, Forsythia, Wiegela, Japan Quince, and the finer Lilacs, are all readily procurable.

Edging and Hedges may be set. Box is generally used for edgings; if old and straggly, reset it. Moss-Pink, Thrift, and other perennials, have been more or less used as substitutes. A great many shrubs not generally used for the purpose, may be made, with proper care, to form a hedge. Privet, Buckthorn, and Barberry, are among the most common deciduous shrubs for garden hedges. They may be set early. Hemlock and Arbor vitae are in all respects preferable, but they are put out later.

Trees for the lawn, yard, and roadside, should receive the same care in the selection of specimens, careful planting and soil, that is given to fruit trees. A tree is very difficult to kill, but many who set them out for ornament, very nearly succeed in doing it. If wild trees are used, select them from the edges of the woods and exposed situations, and choose those of moderate size.

Hardy Climbers have claims which ought not to be overlooked. The Virginia Creeper, Trumpet Creeper, Wistaria, the Honeysuckles, Climbing roses and many others will cover an unsightly wall with a mantle of beauty.

Green and Hot-Houses.

The amateur florist will be glad to find, after a winter of more than usual severity, that the sun now does a good share of the heating. Ventilate all that the weather will allow at mid-day, but shut the house early in the afternoon, and be prepared to give fire heat whenever it is needed. Much of the utility of a small house is in preparing plants for summer blooming out of doors. Aside from keeping tender things through the winter, it serves to prepare an abundance of

Bedding Plants. The propagation of Verbenas, Antirrhinums, Lantanas, Heliotropes, etc., may be pushed rapidly. A single plant of a new sort, procured now, will make 6 to 10 plants by planting time.

Bulbs, such as Tuberoses, Japan and other Lillies may be forwarded in pots, to be turned out for early bloom, and the

Tender Annuals may be sown in boxes or pans. Oranges, Lemons and other

Shrubs, if they have grown straggling, are to be brought into shape by heading back.

Azaleas and Camellias, the one just blooming, the other pushing its new growth, need more water.

Dahlias may be set in where they will start, and rare sorts be propagated from cuttings.

Repot those plants about to make a new growth, which need it, and if the pot is already large enough, shake out the old earth and repot with fresh.

Cold Grapery.

Open the doors and ventilators, in order to keep the house cool, as it is not generally desirable to uncover and start the vines until next month. Woodward's Graperies (see Book List) gives plans for both cheap and expensive structures, and a description of a simple grape house was given in our issue for March, last year.

Apiary in March.

Prepared by M. Quinby—By request.

If any bees are to be transferred to the new beehives, or any change of stands whatever is yet to be made this spring, it should be attended to without delay, before they commence work. Loss of bees will be greater as the changes occur near the working season. When moved a mile or more, and the stands are put down not nearer than six feet apart, the loss will be but little at any time. Very good stands are made by laying scantling on the ground, on which to nail boards wide and long enough for the bottom of the hive. A separate roof for each one is best. The first warm day of spring, when the bees fly freely, is a critical time, especially if there has been any change of stands. The bees of a queenless hive will often desert, and join some hive more fortunate. Others that have a queen will sometimes issue in such haste as to fail to mark their own, and in their confusion enter strange hives on their return. Occasionally the greater portion of a half dozen families will unite with one strong one, crowding it entirely too much for its prosperity, while the others are too much weakened to defend themselves against robbers or the moth. A strong colony in early spring is most valuable—but excess here, as in other things, produces evil—extremes should be avoided. Examine all the hives closely the next morning. The weakest one—if it has a queen—should be changed to the stand of some strong one, the strong to the weak one, etc. Endeavor to get all equalized in this way within the first few days after they begin to fly. Another method may be adopted when one or two are left with only a few bees and their queens. Drive from the over populous colony enough for a good swarm (not quite as many as would constitute a good swarm in July) into an empty box, let them remain

until you are satisfied that they have no queen, which is known by their uneasy movements. Then they may be introduced to the weak hive, setting it close to the stand of the strong one; or it may be kept in a dark room a few days, after which it may be set anywhere else. Should there be too many bees left in the strong hive, for profit, take out bees for another stock or two in the same way. In case a movable comb hive becomes over populous, it may be simply divided, making two, by putting half of the combs with bees attached into an empty hive, and setting them each side of the old stand, leaving a space of two feet between them. Give to that half which is destitute of a queen, one of the small colonies, and fill out both hives with the combs from the weak one. In moving bees from their winter quarters in the cellar or dark room, let each hive occupy its old stand, as far as practicable; bring out six or eight at a time, and put them on stands as far apart as possible; two hours afterwards put out as many more on stands between the others, and separated like them.

The value of flour as a substitute for pollen, depends very much on the early flowers in the neighborhood. If there is an abundance of alder, and swamp willow, and not a great many bees, there will be a full supply of pollen the first few warm days. But if many bees and few flowers, they need some substitute. Rye, ground close and unbolted, is probably best. Make a floor a few feet square, put a curb round it three inches high, to keep it from wasting, and spread a few quarts at a time on this—locate it as much as possible out of the winds. Simple flour should be mixed with sawdust, cut straw, or some thing to keep it from adhering too much to the bees. Begin with the first warm days, and sprinkle small quantities on and near the floor. After the bees have tasted it, putting it on the floor is sufficient. They will carry off two or three lbs. per hive, before real pollen is obtained. Much more than this on an average, might be detrimental. Should any pollen be obtained before the flour is offered, it is doubtful if they can be made to notice it. After they begin to fly, the needy ones may be fed by putting honey in the chamber of the hive. Robbing will commence if at all on the first real warm days. Look among them at sundown, any at work then, will indicate it. Put the hive that is attacked in the cellar, till a few warm days are past, and then return to the stand. The surest guarantee against robbing is, to have no weak colonies.

As good as our Word.—Thirty-two pages this month, and (as usual now-a-days) eight extra ones—or 30 in all. Some kind contemporaries have stated that the *Agriculturist* is a 40 page quarto. Not so; we do not wish to sail under false colors or mistaken compliments. We promise 32 pages. If our advertisers need more room, we accommodate them by adding more pages, and for each page so added give also an extra page of reading. Is not that fair all around?

A Fine Engraving.—In republishing Downing's Landscape Gardening, the original steel plate of the author's portrait could not be found. We have had a new portrait engraved from the only existing daguerreotype. The work was entrusted to Mr. H. W. Smith, who has produced a most satisfactory likeness and an excellent picture. For the accommodation of the friends of Mr. Downing we have impressions on India paper, suitable for framing, which will be sold at \$1 each.

Haymaking and Harvesting Implements.—Do not procrastinate. There are several excellent mowers and reapers. If farmers wait to learn which will get the prize this year at the great New York trial, or at any other, they will be sure to fail in getting the one they want, for the orders will be so far ahead of the ability of the manufacturers to supply, that they will be obliged to take the best machine they can get, which will very likely be one which they would not think of choosing. We know farmers who have mowed by hand, or hired the grass cut by machines these ten years just because they could not tell which machine to buy. There is a good chance yet for several farmers to get the Buckeyes which we offer as premiums. There will be no delay in this case, for the machines are now made and subject to our order. We have this day ordered one No. 2, which will be shipped and received before this paper reaches the subscribers.

Commercial Matters—Market Prices.

The following condensed, comprehensive tables, carefully prepared specially for the *American Agriculturist*, show at a glance the transactions for a month, ending Feb. 15, 1866, and the exports of Breadstuffs from this port thus far, since January 1:

TRANSACTIONS AT THE NEW-YORK MARKETS.									
RECEIPTS.	Flour.	Wheat.	Corn.	Rye.	Barley.	Oats.	25 days this m'th.	25 days last m'th.	125,000
25 days this m'th.	109,500	21,500	211,000	6,300	69,500	201,000			
25 days last m'th.	125,000	31,500	139,000	11,300	10,500	61,000			
SALES.									
RECEIPTS.	Flour.	Wheat.	Corn.	Rye.	Barley.	Oats.	25 days this m'th.	25 days last m'th.	125,000
25 days this m'th.	109,500	21,500	211,000	6,300	69,500	201,000			
25 days last m'th.	125,000	31,500	139,000	11,300	10,500	61,000			

CURRENT WHOLESALE PRICES.

	Jan. 15.	Feb. 15.
PRICE OF GOLD.	140 1/2	138 1/2
Flour—Super to Extra State	\$6.90 @	\$8.40
Super to Extra Southern.	8.90 @	15.25
Extra Western.	7.85 @	15.00
Extra Genesee.	8.45 @	11.25
Superfine Western.	6.90 @	7.40
RYE FLOUR.	5.00 @	6.00
CORN MEAL.	4.25 @	4.85
WHEAT—All kinds of White.	2.85 @	2.75
All kinds of Red and Amber.	1.62 @	2.55
CORN—Yellow.	86 @	95
Mixed.	83 @	89 1/2
OATS—Western.	38 @	60
State.	60 @	61
RYE.	85 @	110
BARLEY.	85 @	115
HAY—Bale of 100 lb.	80 @	100
LOOSE.	85 @	110
STRAW, of 100 lb.	65 @	115
COTTON—Middle.	32 @	53
HOPS—Crop of 1865.	25 @	65
FEATHERS—Live Geese.	80 @	90
SEED—Clover.	12 @	13
Timothy, of bushel.	3.75 @	4.25
Flax, of bushel.	2.70 @	3.00
SUGAR—Brown.	11 1/2 @	15
MOLASSES, Cuba.	35 @	55
COFFEE—Rio, (Gold price)	17 1/2 @	20 1/2
TORRACO, Kentucky, &c.	6 @	30
Seed Leaf, of lb.	3 @	40
Wool—Domestic Fleeced.	50 @	80
Domestic, pulled.	50 @	67 1/2
California, unwashed.	20 @	42 1/2
TALLOW.	12 1/2 @	13 1/2
Oil, Cakes, of ton.	50 @	64
PORK—Mess, of barrel.	30 @	31 1/2
Prime, of barrel.	22 1/2 @	23 1/2
DREIF—Plain mess.	16 1/2 @	20
LARD, in barrels.	15 1/2 @	13 1/2
BUTTER—Western.	20 @	30
State.	25 @	42
CHEESE.	12 @	42
BEANS—of bushel.	2.00 @	2.50
PEAS—Canada.	1.25 @	1.30
BOES—Fresh, of dozen.	38 @	40
POULTRY—Fowls.	18 @	20
Turkeys.	18 @	20
Pheasants—Merced.	2.50 @	3.00
Peach Blows.	2.25 @	2.60
Buckeyes—New.	1.75 @	2.00
APPLES—of barrel.	2.00 @	5.00

Business in produce and merchandise has been checked by the declining tendency of gold. The difference in the closing prices of gold this month, and last, is nearly two percent, in favor of buyers. Flour and grain has been more freely offered, and the tendency of the market has been generally downward. This is particularly true of grain. Medium and finer grades of flour close firmer on an improved home demand. Shipping brands of flour and nearly all descriptions of grain leave off at drooping prices under a limited inquiry. Most of the new wheat available is rather inferior, or unsound, and not suitable for shipment. Unsound Corn and Oats are also in large supply. Provisions have been unsettled. Hog products have been less sought after at reduced prices, closing heavily. Beef has been dull, but firm. Butter and cheese have been in active demand, and quoted higher. Cotton has been in less request and has declined materially, under the pressure of accumulating supplies, and unfavorable foreign news. At the close, more steadiness results from a partial revival of the spinning and shipping inquiry. Wool has been moderately active, the better qualities having been in most favor and at steady rates; while inferior grades have been depressed. Hay, Hops, and Tobacco have been in moderate demand at our quotations. Seeds have been quiet and heavy.

New York Live Stock Markets.

BEEF CATTLE.—The supply for the past four weeks (ending Feb. 13th) has been good and full for the season, averaging 5399 per week. Prices declined somewhat at the last market and stood: Extras, 10 1/2c @ 18c per lb., estimated dressed weight; medium to good, 13c @ 14c; poor qualities, 10c @ 12c. **MILK COWS** were in light demand. **Veals.**—Weekly average on the increase. Good veal brings 12c @ 14c per lb., live weight. **Sheep.**—Average supply, 18,757. Prices declined at last market to 5c @ 6c per lb. **Live Hogs.**—Supply averaged 10,567. Prices, according to quality, 10 1/2c @ 11 1/2c per lb., live weight.

BOOKS FOR FARMERS AND OTHERS.

[Any of the following books can be obtained at the Office of the *Agriculturist* at the prices named, or they will be forwarded by mail, post-paid, on receipt of the price.]

Allen's (L. F.) Rural Architecture.	\$ 1.50
Allen's (R. L.) American Farm Book.	1.50
Allen's Diseases of Domestic Animals.	1.00
American Bird Fancier.	.30
American Rose Culturist.	.30
American Weeds and Useful Plants.	1.75
Art of Saw Filing (Holly).	.75
Barry's Fruit Garden.	1.75
Beecher's (H. W.) Fruit, Flowers and Farming.	1.50
Bement's Poultry Companion.	2.00
Blake's Farmer's Encyclopedia.	1.50
Bonssingault's Rural Economy.	1.60
Bridgeman's Fruit Cultivator's Manual.	.75
Bridgeman's Young Gardener's Assistant.	2.00
Bridgeman's Kitchen Garden Instructor.	.75
Bridgeman's Florist's Guide.	.75
Brandt's Age of Horses (English and German).	.75
Breck's Book of Flowers.	1.50
Brown's Field Book of Manures.	1.50
Buist's Flower Garden Directory.	1.50
Buist's Family Kitchen Gardener.	1.00
Burr's Vegetables of America.	5.00
Canary Birds, paper 50 cents.	.50
Carpenters and Joiners' Hand Book (Holly).	.75
Chorlton's Grape-Grower's Guide.	.75
Cobbett's American Gardener.	.75
Cole's (S. W.) American Fruit Book.	.75
Cole's Veterinarian.	.75
Cornish's Agriculture.	5.00
Cotton Planters' Manual (Turner).	1.50
Dadd's Modern Horse Doctor.	1.50
Dadd's (Geo. H.) American Cattle Doctor.	1.50
Dana's Muck Manual.	1.25
Dog and Gun (Hooper's).	.30
Downing's Country Houses.	8.00
Downing's Gardening (new Edition).	6.50
Downing's Cottage Residences.	2.50
Downing's Fruits and Fruit Trees of America.	3.00
Downing's Rural Essays.	5.00
Eastwood on Cranberry.	.75
Elliott's Western Fruit Grower's Guide.	1.50
Employment of Women—By Virginia Penny.	1.50
Flax Culture.	.75
French's Farm Drainage.	1.50
Field's (Thomas W.) Pear Culture.	1.25
Fish Culture.	1.25
Flint (Charles L.) on Grasses.	2.00
Flint's Milk Cows and Dairy Farming.	2.00
Fuller's Grape Culturist.	1.50
Fuller's Strawberry Culturist.	.20
Goodale's Principles of Breeding.	1.25
Gray's Manual of Botany and Lessons in one Vol.	4.00
Gray's How Plants Grow.	1.25
Guehon on Milk Cows.	.75
Hall's (Miss) American Cookery.	1.25
Harris's Grape Culturist.	1.50
Harris's Insects Injurious to Vegetation, plain.	4.50
Harris's Insects Injurious to Vegetation, colored plates.	5.00
Herbert's Hints to Horsekeepers.	1.75
Hints to Riflemen, by Cleveland.	1.50
Hints to Farmers.	4.50
Hop Culture.	.75
How to Buy a Farm and Where to Find One.	1.75
Insect Enemies of Fruit Trees (Trimble).	3.00
Jaques' Fruits and Fruit Trees.	.60
Jennings on Cattle.	2.00
Jennings on Poultry.	2.00
Jennings on the Horse and his Diseases.	2.00
Johnson's Agricultural Chemistry.	.75
Johnson's Elements of Agricultural Chemistry.	1.25
Kemp's Landscape Gardening.	2.00
Langstroth on the Honey Bee.	2.00
London's (Downing's) Ladies' Flower Garden.	2.00
Leach's (Miss) Fruit and Flower Trees.	1.50
Liebig's Familiar Letters on Chemistry.	.50
Liebig's Natural Laws of Husbandry.	1.50
Linsley's (D. C.) Morgan Horses.	1.50
Manual of Agriculture by G. Emerson and C. L. Flint.	1.50
Mayhew's Illustrated Horse Doctor.	3.50
Mayhew's Illustrated Horse Management.	3.50
Mayhew's Practical Book-Keeping for Farmers.	1.20
Blanks for do.	do
McMahon's American Gardener.	2.50
Miles on the Horse's foot.	.75
Morrill's American Shepherd.	1.75
My Farm of Edgewood.	1.75
Noble's Scientific Agriculture.	2.00
Onion Culture.	.20
Our Farm of Four Acres (bound) 60c.	.60
Pardee on Strawberry Culture.	.75
Parsons on the Rose.	1.50
Phantom Bonquet, or Skeleton Leaves.	2.00
Pedder's Land Measurer.	.60
Quincy's Mysteries of Bee Keeping (New).	1.00
Rabbit Fancier.	.80
Randall's Sheep Husbandry.	1.50
Randall's Fine Wool Sheep Husbandry.	1.00
Rand's Flowers for Parlor and Garden.	3.00
Richardson on the Dog.	.80
Rural Affairs (bound). 4 Vols.	1.50
Rural Annual (by Joseph Harris).	.25
Rural Register (by J. J. Thomas).	.20
Saunders' Domestic Poultry, paper, 30 cts., bound.	.60
Saxton's Farmers' Library, set of 3 Vols. morocco.	8.50
Saxton's Farmers' Library, set of 3 Vols. cloth.	8.50
Schenck's Gardener's Text Book.	.75
Shepherd's own Book.	2.25
Sillway's Modern Carpentry.	2.00
Skiffull Housewife.	.75
Spencer's Education of Children.	1.50
Stewart's (John) Stable Book.	1.50
Templeton's Mechanic's Pocket Companion.	1.50
Ten Acres Enough.	1.50
Tenny's Natural History and Zoology.	3.00
The Great West, bound.	1.00
Thompson's Food of Animals.	1.00
Tobacco Culture.	.25
Todd's (S. E.) Young Farmer's Manual.	1.50
Vaux's Village Cottages.	3.00
Villas and Farm Cottages, (Cleveland and Backus).	3.00
Wardner's Hedges and Evergreens.	1.50
Watson's American Home Garden.	2.00
Wax Flowers (Art of Making).	1.50
Wet Days at Edgewood.	1.75
Wheeler's (John) Manufacture of Vinegar.	1.50
Wheat Plant (John Kilpatrick).	1.50
Woodward's Country Houses.	1.50
Woodward's Graperies.	1.50
Yonatt and Spooner on the Horse.	1.50
Yonatt and Martin on Cattle.	1.50
Yonatt on the Hog.	1.00
Yonatt's Sheep.	1.00
Yonatt's Household Science.	2.00
Yonatt's New Chemistry.	2.00

Book Orders Delayed.—There are a few books on our list, new editions of which are now in press, having been delayed by the difficulty of getting good paper. Orders for them will be filled very soon.

Todd's Young Farmer's Manual—

No. 2.—In answer to inquiries about this work, which has been announced by its author for sometime past, we reply that Messrs. Orange Judd & Co., recently purchased the entire work, plates and copy-right. But on a full examination it was deemed best to give it a thorough editorial revision, pruning it of its erudities, and arranging its materials in a far more systematic order than they were left by the author. As it contains many valuable hints, the revision will make an excellent work of it. This course involves the re-setting and stereotyping of the book, and it will not be ready for some time yet.

SPRING WORK

Is Coming on,

And many persons who just begin to think about the work in their Garden and Orchards, and on their Farms, will feel the need of hints and suggestions just such as they will find in the *Agriculturist*. This is therefore a good time to fill out the list of subscribers for Premiums already under way, and to gather names for new lists. The premiums will be open for three months yet, and all subscribers obtained for this volume (25th) will count on any list. More than One Thousand Persons have obtained good premium articles this year from the list below, and a thousand or more may yet obtain them. We have only room this month for the Table. For regulations and descriptions, see the January and February numbers, and especially the large **Descriptive Sheet** which is forwarded free to all desiring it. Send for it.

Table of Premiums and Terms,
For Volume 25.
Open to all—No Competition.

Names of Premium Articles.		Price of Premiums at \$1.00 each.	Names at \$1.00 each.
1—Good Books—See terms below.			
2—Garden Seeds for a Family (10 kinds).	\$5.00	14	35
3—Flower Seeds for a Family (100 kinds).	\$5.00	14	35
4—Nursery Stock (any kinds desired).	\$20.00	30	100
5—Jona Grape Vines (12 of No. 1).	\$18.00	27	92
6—Concord Grape Vines (100 of No. 1).	\$12.00	19	65
7—Japan Lilies (12).	\$5.00	15	38
8—Downing's Landscape Gardening.	\$5.00	15	40
9—American Encyclopedia.	\$80.00	96	338
10—Worcester's Great Illustrated Dictionary.	\$12.00	19	65
11—Any back Volume <i>Agriculturist</i> .	\$1.75	20	
12—Any Two back Volumes do.	\$2.50	25	26
13—Any Three do do do.	\$3.75	38	32
14—Any Four do do do.	\$5.00	51	35
15—Any Five do do do.	\$6.25	64	41
16—Any Six do do do.	\$7.50	77	50
17—Any Seven do do do.	\$8.75	89	57
18—Any Eight do do do.	\$10.00	102	64
19—Any Nine do do do.	\$11.25	115	72
20—Any Ten do do do.	\$12.50	128	80
21—Halt in the Woods do do.	\$10.00	102	64
22—Morton's Best No. 5 Gold Pen, Silver Case.	\$4.50	12	32
23—Case of Drawing Instruments.	\$8.00	16	45
24—Best Family Clothes-Wringer.	\$10.00	18	58
25—Poly's Washing Machine.	\$12.00	19	65
26—Tea Set (Best Silver Plated).	\$50.00	67	240
27—Sewing Machine (Wheeler & Wilson).	\$35.00	70	270
28—Sewing Machine (Wilcox & Gibbs).	\$35.00	70	270
29—Sewing Machine (Elias Howe).	\$60.00	75	280
30—Melodeon (Best Four Octave).	\$67.00	80	300
31—Melodeon (Best Five Octave).	\$112.00	143	450
32—Piano, 7 Octave (Steinway & Sons).	\$400.00	500	1500
33—Barometer (Woodruff's Mercurial).	\$12.00	19	70
34—Barometer (Woodruff's Mercurial).	\$18.00	22	95
35—The Aquarius, or Water Thrower.	\$11.00	19	65
36—Buckeye Mowing Machine No. 2.	\$125.00	150	450
37—Allen's Patent Cylinder Plow.	\$20.00	31	100

No charge is made for packing or boxing any of the articles in this Premium List. The Premiums, 1, 2, 3, 7, 5, and 13 to 26, are DELIVERED to any part of the United States and Territories, free of all charges. The other articles cost the recipient only the freight after leaving the manufactory of each. Every article offered is new and of the very best manufacture.

*** Premium 1.—Good Books.**—Any person sending 25 or more subscribers, may select Books from the List on this page, to the amount of 10 cents for each subscriber sent at \$1; or to the amount of 50 cents for each name sent at the (ten) club price of \$1.25 each; or to the amount of 60 cents for each name at \$1.50. This offer extends only to clubs of 25 or more names. The Books will be sent by mail or express, prepaid by us.—This is a good opportunity for the farmers of a neighborhood to unite their efforts and get up an Agricultural Library for general use.

A Talk about Sundry Humbugs.

Our suggestion last month has been so largely responded to, that already (Feb. 12th) we have a large basketful of letters, detailing the operations of swindling concerns. Most of these are from new subscribers, those who have not read our frequent warnings. There is abundant evidence that had the *Agriculturist* been read in every family in the country, for a single year, the aggregate saving in money paid to swindlers, would have far exceeded our entire subscription receipts for five years past. From the attention we have recently given to the subject, we think the daily receipts of these swindlers range from *five to ten thousand dollars a day!* We have the names of over *thirty* different concerns, though several of them are run by the same individuals, under different names. Their circulars are scattered throughout the whole country, from Nova Scotia to California. By various means, they have gathered the Post-Office addresses of perhaps two millions of persons; and to these they are continually forwarding their ingenious schemes to trap the unwary. It costs but four cents to prepare these documents and send them very confidentially as a post-paid letter; and if the bait takes with one in a hundred, so as to bring them five or ten dollars, they make a large profit; for very few of them give even the smallest return for the money received. (And here we desire to say, in answer to sundry hints and inquiries from some subscribers, who wonder where their names were obtained, that no one has ever had access to our mail books or list of subscribers, on any pretense, or for any purpose whatever. We have been so cautious on this point, that when referring to any correspondent, we give only his county, omitting his town and Post-Office, to save him the annoyance of receiving a host of humbug circulars; nor do we ever allow any kind of circulars to be enclosed in the *Agriculturist*. They get names from Post masters under false pretenses, and by special offers to persons who privately send them the names of a hundred or more persons in a town.)

One of the worst features of the business is, that the swindlers are adepts at evading the laws. We have consulted with the Mayor and our City District Attorney. We found Mayor Hoffman ready and anxious to do what he could, yet greatly trammelled by the want of specific laws to reach the cases of certain of these operators. For example, our State laws entirely prohibit dealing in lottery tickets, yet the dealers contest the application of these laws, claiming that their U. S. license is above State laws. This matter is in litigation and not yet decided. While waiting this decision, and the results of other efforts, we must do what we can to warn people; and we beg our readers to talk over the matter, and get these warnings and exposures as extensively known as possible. For this purpose alone it would be desirable to have the *Agriculturist* still more widely circulated.—Show this page to the Post-master, and ask him to warn people against sending letters to any of these names, or to others of like character or pretensions. Every Post-master would find it to his advantage to subscribe for the "*U. S. Mail*," a monthly journal, edited by J. Gayler, New York, and furnished at \$1 a year. Besides its great amount of information about all Post-Office matters, it is severe on the class of swindlers operating through the mails. The Feb. No. contains an excellent suggestion to Post-masters about fraudulent concerns.

An important Bill is now before Congress in reference to excluding these humbug circulars from the mails. It ought to pass at once.—We here group together a number of humbug operators:

"*Hayward & Co.*"—The villain operating under this name, and sundry aliases, has done an extensive and successful business. We have letters concerning his operations from all over the country. Some time since we found him in a small room at 229 Broadway, in an upper story, with less stock than could be put into a carpet bag, aside from the immense numbers of circulars he was sending out with the aid of clerks. Yet he has distributed a circular with his name emblazoned upon a picture of the whole front of the building, which is occupied by more than fifty business offices. Very few of the occupants of these offices even know that there is such a person as Hayward in the building. He pretends to have bought great stocks of watches and jewelry of "a large number of Importers," etc., who have failed by the decline in gold. There have been no such failures.—For a time he offered tickets at 25 cents a piece, or less. Latterly he has sent the tickets at once, pretending to have received the money for them. These tickets call for various articles, watches, diamond rings, chains, gold pencils, etc., etc., valued from \$6 to \$250 each, on paying \$5.24. Sometimes, as a bait, he sends out gold pens, etc., where there are many to be caught. This takes, and back come a lot of \$5.24 letters, which he pockets. Usually

no answer can be obtained from him. He generally denies the receipt of these letters, but when sharply cornered, or caught by a registered letter, he pretends the money had been abstracted before it reached him, or that he has forwarded the article. He puts on a patronizing air, and tries to avert suspicion by pretending to caution people against other swindlers. His dodges, as described to us in a multitude of letters, are "too numerous to mention"—we cannot now answer further inquiries.

D. W. Hammond & Co., 162 Montague-st., Brooklyn, is of the same ilk as Hayward & Co., probably the same party. The circulars are every way alike, except the different headings, and address, of Hayward & Co. and Hammond & Co.—the type-setting, and orthography, and even broken letters showing them to be printed from the same type or stereotype.

E. G. Horton, Danville, N. J., "Manager of the California Manufacturing Jewelry Association," is another like Hayward & Co., if not the same.

I. E. Loomis & Co., Warren, R. I., of the same class.

"Dr. Freeman" and his "Journal of Science," have been too often denounced as humbugs, to need more than the mere recording of his name in this list.

Chidester & Co. belong to Dr. Freeman's class of wonder-doing pretenders.

Jason H. Tuttle, Flatbrookville P.O., N. J., imitates Hayward & Co. (if not the same party); but offers large things—Rosewood Pianos, etc.—for \$2. We hear of multitudes taken in by him. An unmitigated swindler.

Chester M. Wakeman, of Jersey City or N. Y., started a "Mutual Protection Union," a pure swindle, directing his letters sent to Danville, Me.; but thinking he had got the Post-master there to assist him, he "caught a Tartar." He uses fictitious names, etc., on his grand scheme. The Danville P. M. will attend to his case, if he will call there. There are three other schemes of the same kind, differing only in some of the names used.

Everett E. Morgan is one of those chaps we have often described, who offers to lie a ticket through a bogus concern. Of course he lies everybody out of money, who trusts him.

W. H. Morgan, same class as E. E. Morgan.

George Y. Hoffman, same class as C. M. Wakeman.

James P. De Wolfe, same class as E. E. Morgan.

Mr. H. H. Colfax, same class as E. E. Morgan.

The above are a variety of the names used by a comparatively few parties. They will, as heretofore, continue to change name and P. O. address from time to time. If our readers will cast aside every tempting bait offered in printed circulars and advertisements proposing to give anything by chance drawings, or to furnish anything at less than its legitimate value, there will be half a million at least, whom these swindlers cannot reach.

BEWARE of "No Ink Pen," which don't exist; of Photographic apparatus offered cheap by unknown parties; of sending money for Maps to be published at some indefinite future time; of (Rev.) Jos. T. Inman, etc., etc.

LOTTERY TICKETS.—We can not, in these days of intelligence, greatly sympathize with those who lose money in any kind of lottery schemes. Yet we can not but pity those who suffer from any deficiency of judgment or discretion. If there were no such persons, we should cease to "have the poor always with us."—We have received hundreds of lottery schemes, forwarded by subscribers. The following are among the most prominent operators at present, who, under the plea of a U. S. license, and other subterfuges, manage to evade the laws. That they are successful, our observations at the Post Office delivery furnish abundant evidence.

No. 1. Fletcher Bros., Box 5549, P. O., N. Y. City.

No. 2. T. Seymour & Co., Box 4259, P. O., N. Y. City.

No. 3. Hammett & Co., Box 2100, P. O., N. Y. City.

No. 4. A. Buck & Co., Box 232, Washington, D. C.

No. 5. P. Hoffman & Co., Box 224, Washington, D. C.

No. 6. W. J. Elliott & Co., Box 4609, P. O., N. Y. City.

No. 7. Egerton Bros., Box 4196, P. O., N. Y. City.

No. 8. Thos. Boulton & Co., Box 5713, P. O., N. Y. City.

These eight parties all use precisely the same printed lottery schemes, except that the headings and signatures are changed to correspond with the several names. Each incloses a printed envelope directed to himself. Each sends a "private and confidential" lithographed letter, resembling a written letter. All these letters greatly resemble each other. No. 4 and No. 5 are exactly the same, except heading and signature. No. 1, 2, 3, 6, 7, 8, are essentially alike, except the names, and a little variation in the prizes—\$2000 in one, and \$1200 in the other two. No. 6 varies the form, talks about doing away prejudices against Lotteries by getting for some one \$5000 (not a mere \$1200 or \$2000, but \$5000!) They all appear to emanate from the same mind, and all operate alike. An explanation of one answers for the whole. Thus:

Hammett & Co. write to the person addressed, that they are agents (with U. S. license) for a Covington legal lottery, and send grand schemes for prizes; that they

want to do a large business, and that accidentally meeting the name of the addressed party, they were led to think him just the one to help them. They therefore offer to send him, for the bagatelle of \$10, a "certificate of a package of tickets," (not the tickets themselves) "lucky," for \$1200 to \$3000; that from long experience they know how to select lucky numbers; that they do this because the party receiving them is expected to show his prize to many, and make known the character of the said Hammett & Co. as sellers of lucky tickets, and they thus will get a large business, while the prize money will come out of the pockets of the lottery managers. There is a lot more of stuff, such as the offer of other tickets free, inquiries how to forward the money, etc., etc.

It seems strange to many that there should be persons unsophisticated enough to bite at such a bait, yet there are, and it is the duty of those who are wiser, to do what they can to enlighten the ignorant and credulous; to inform them that these swindlers make the same "private and confidential" offer to every person in the same town, whose name they can get; that any lottery is a fraud, even if the chances are made equal, for from the money distributed large sums are deducted for expenses, profits, etc.; that if a lottery be fairly conducted, it is a fraud for any one to claim the ability to select lucky numbers; while, if not fairly conducted, every investor is likely to be defrauded; that these "lucky agents" would keep and draw sure lucky tickets themselves. For example, would T. Seymour & Co., instead of keeping a ticket sure to draw \$2000, be likely to send it to you as an advertisement of themselves, when they would have to sell in your neighborhood *Thirteen Hundred* \$10 tickets, in order to realize \$2000 as the commission of 15 per cent. on the tickets, to say nothing of postage, printing, etc.? Finally did anybody ever hear of a prize drawn by these "private and confidential" agents, who send \$10 each?

We have thus devoted unusual space to this subject, because it seems to be needed. Until we can get the strong arm of the law to crush these pests of society, who fatten upon the ignorance and simplicity of the people, we shall keep on uttering warning after warning. We have on hand and are constantly receiving accounts of other swindling operations, which will receive attention. Some of them are under investigation.

A Look into a Swindling Shop.—

In this city, and elsewhere, especially in large cities and towns where a new flock of victims can be constantly secured, there have lately sprung up a great number of establishments, at which are offered a lot of articles, all at \$1 each, with a chance for a "splendid prize" thrown in. In order to study the *modus operandi*, we took a dollar (leaving the pocketbook behind for safety), and dropped into one of these "splendid prize" shops, up Chatham-st. There was a fine array of silvered ware, tea sets, etc., all numbered and marked as prizes, with cases full of articles for sale at \$1 each, and apparently fully worth that sum. We invested \$1 in a "Ridgewood Case," the usual price for a well-made article being \$2 to \$5.—Ours probably yielded a profit at \$1. But the "splendid prize" was what we were after. A large box of envelopes was handed out, from which we drew one containing ticket No. 232. That gave us a "gift locket," costing less than a one cent, and worth 0. (We noticed that out of 300 numbered prize articles, 200 were these "lockets," about 80 were other shawty but valueless things, and about 20 were things worth apparently from \$1 to \$50.) We were told that by paying half-price (50 cents), we could draw again, and for effect, we showed a partial willingness to do so. While this was going on, two men came in, and each paid fifty cents for a chance. They both drew "lockets," and tried again at fifty cents. The second time one drew a pretty gilt bell, for which the operator immediately paid him \$1, and the other got a fine silvered butter plate with ornamental cover, for which the operator paid him \$5. They went on drawing rapidly, now lockets, then costly articles, and selling them back. They were apparently having grand luck, and making lots of money. They were of course "stool pigeons," to dazzle our eyes, and by means of privately marked envelopes, and slight of hand in changing numbers, got any articles desired. We received numerous invitations "to try our luck," but after learning enough, we left to write out this item. The above shows one of the ways these concerns take in the unwary.

Oil Swindles.—An old comrade in the Agricultural laboratory at Yale College, who has for many years resided in south-eastern Ohio, (except while absent in command of an Ohio regiment during the war,) sends us a familiar letter, from which, though a private one, we take the liberty to publish the following extract: "....I think you were wise in excluding from the *Agriculturist* all advertisements of oil companies. From my location, and other reasons, I have practically been obliged to study oil in its geological relations more than

any other geologist in the country, and I know that a very large part of the oil companies are a swindle—their lands being worthless. Buying stock in them would be like buying a lottery ticket at ten prices, and finding at last that the ticket itself was bogus. There is a little oil to be found almost everywhere in the West—just enough to delude—but good locations are only in limited areas.”



Containing a great variety of Items, including many good Hints and Suggestions which we throw into small type and condensed form, for want of space elsewhere.

Several Pages of Basket Items. are crowded out of this number, by the press of matter, for which we hope to find room soon.

TAKE NOTICE!—All Subscriptions begin with the Volume, unless otherwise desired and specified when subscribing. All subscriptions received up to June 15th are entered down for the entire volume, and the numbers from January 1st are forwarded. We keep on hand, or print as needed, from our stereotype plates, the entire numbers of the volume, to supply to subscribers, and to others desiring them. Subscriptions received after June 15th, begin at the middle of the volume, unless otherwise desired or specified.

Letters and Money—Who For?—Here are two letters addressed to the Publishers of the *Agriculturist*, but they are without date, place, signature, or other mark to show whom they came from. One has \$3.60 for three subscribers, and is signed Postmaster (names J. A. Alt, V. Myers, H. Dupont)—the other is an order on some one for several hundred trees, grape vines, etc.—probably for R. G. Hanford. (Where?)

The Large Display of Good Advertisements, are worthy of general attention, and will be found a source of much information. Business men seem to understand where they will find an immense number of wide-awake enterprising readers. Please reciprocate their compliment by letting them know when and where their advertisements were seen and read.

Of the Agriculturist Strawberry Plants we have none to supply.—So many subscribers applied for a plant or two last autumn, that we nearly stripped our entire plot, and the urgent requests for them early in the winter, to be sent in spring, can not be all met, though we shall clear the ground so thoroughly as to leave but few plants for home fruiting. This is the case with many dealers, though a few small lots may perhaps be advertised—possibly in this paper.

Seed and other Orders.—Wm. Simmons, Oregon. Publishing the *Agriculturist* and Agricultural books occupies all our time, and though we should be glad to accommodate our friends by taking their commissions, it is quite impossible for us to do so. Our advertising pages contain the names of numerous dealers in seeds to whom orders may be sent direct. If we procured seeds for you, we should go to any of the dealers whose advertisements are admitted by us.

Broom Corn Seed for Sheep.—A. C. Hayes, Washington Co., Iowa, inquires if “Sorghum and Broom corn seed will make good feed for sheep, for a change?” Mixed with Indian corn or oats and ground, it makes excellent feed.

Grape Cuttings in the open Ground.—J. Maceracke, Esq., Secretary of the Hocking Valley (Ohio) Horticultural Society, gives us the following account of the method of one of the members, Mr. Fettes, of treating cuttings of the Delaware and other grapes: “Mr. Fettes reported his success in propagating the Delaware grape from cuttings as certainly very encouraging, being due, no doubt, to the favorable season, but largely, he thinks, to the *modus operandi*. He makes his cuttings, say three eyes long, then removes with a sharp knife all the bark from the lower end of the cutting close up to the first eye, and as fast as thus prepared he puts the peeled end to soak in a slush of fresh cow manure. They are laid in the ground at the usual angle, as in the ordinary practice. The weaker cuttings are cut into single eyes and laid in a common hot bed. Nine of out ten grew, and transplanting them in about five weeks, he found they had roots two and three inches long. Two thousand five hundred and sixty

Catawba cuttings were prepared in the same manner as the stronger Delaware, and planted in the vineyard 7 by 9 feet apart, two to each stake, and of the lot so prepared and planted, over 2500 grew, showing a growth of new wood on July 5th, 4 to 10 inches long.”

The Rinderpest.—At the annual meeting of the N. Y. State Agricultural Society, this subject was discussed and referred to a committee, Messrs. O. Judd, Jas. O. Sheldon, Saml Thorne, Gen. C. S. Wainwright and Hon. A. B. Conger. They made a somewhat lengthy report and recommended the Society to authorize the Executive Committee to take the subject into careful consideration, and use any needful measures to obtain information etc., at home and abroad. The report was unanimously adopted; and at a subsequent meeting, the Executive Committee appointed the following gentlemen to gather information and prepare for publication a report upon the character of the disease, remedies, preventives, etc., viz.: Hon. Jno. Stanton Gould, Hudson; Hon. A. B. Conger, Haverstraw; Dr. J. T. Williams, Dunkirk; Prof. Luther H. Tucker (of Country Gentleman, Albany), and Col. Mason C. Weld (of the *American Agriculturist*, New York). It is to be hoped that this committee will take early and vigorous action.

Mr. Bolmer's Peach Orchard.—At a recent meeting of the Cincinnati Horticultural Society, Doctor Warden read a long communication from Mr. Lewis Bolmer, of the Great Miami Valley, giving an account of his success with a new method of peach culture. The trunks are kept surrounded by a mound of earth and the limbs have winter protection also. We have not space to give an abstract of this interesting document now, but will endeavour to do so hereafter.

Fruit Query.—Henry Hunt asks, if seedlings of fine cherries grafted on Morello stocks will produce fruit like that of the cherry from which the seed came. Seedling fruits are not apt to be like their parents, and grafting these seedlings into any stock will not change the result. The fruit may be better or worse than the parent: there is little chance of its being just like it.

The American Pomological Society.—The President of this association, the Hon. Marshall P. Wilder, writes that Tuesday, the 4th of September next, is appointed for the commencement of the next session, at St. Louis, Mo. We learn that it is the intention of western pomologists to make this the most attractive, and it will undoubtedly be the largest meeting held in many years.

Clapp's Favorite Pear.—J. Coombs, Westchester Co., N. Y., and others. There is such a pear as the Clapp's Favorite. It has been chiefly grown near Boston, and held at a rather high price. We have not seen the fruit, but Mr. Hovey informs us that it has not fulfilled the expectations which were held regarding it.

Evergreens from the Forest.—Every year large quantities of Arbor Vitae and other evergreens are exposed for sale in the streets of New York. Large trees of this kind are not as likely to live as those grown in the nursery, but small ones are more sure to grow. These forest seedlings are frequently bought by nurserymen at a low price, and after a few years in the nursery, they make salable trees. We had occasion to buy a large lot of these young trees for a relative at the West some years ago, and though a considerable number died, enough were saved to make the investment a profitable one. These trees are generally sold by vendors on the streets, and if there are any regularly engaged in the business, they should let it be known by advertising. The only place we know of to get these forest trees of first hands, is at Bangor, Me. Mr. Henry Little of that place has for some years been engaged in furnishing trees, and is prepared to fill orders.

Doolittle's Black Cap Raspberry.—R. W. Woodville, Rice Co., Minn., asks what is the difference between the Doolittle and the common Black Cap. It is only a more prolific variety, bearing larger and better fruit, just as the New Rochelle. Kittatany, etc., are better forms of the common blackberry.

Sex of the Tribune Strawberries.—“Subscriber,” Westchester Co., Pa. The Monitor, Col. Ellsworth and Brooklyn Scarlet have perfect flowers, and will need no other kind set with them to fertilize them.

Substitute for Glass.—S. P. Miller, Logan Co., Ohio, asks about the use of oiled muslin and paper for hot-bed sash. The thing is not new, and has been more or less used these many years. A frame covered in this way will be better than no hot-bed, but it will

not be cheaper in the end; the cloth is easily torn, and sags with changes of temperature and the weight of rain or snow. Besides, considerable light is obstructed.

Fall Planting.—“C. J. B.,” Bethany, Mo., set out a vineyard last fall, and now has fears that he did wrong, and wishes to know if he had better plant over again without waiting to see the result. We should certainly not plant over again, as the vines are quite likely to do well, if they were properly set. Some of our best vineyardists prefer autumn to spring planting.

Models of Fruit.—J. H. Luhnke & Co., 556 Broadway, N. Y., have left at our office samples of porcelain models of fruit, made under the direction of the Thuringian Horticultural Society. These are intended for pomologists as standards of comparison. The catalogue includes European varieties mainly, but we understand that it is the intention of the society to publish models of American fruits as fast as they can be procured.

The Snow Apple.—A New York subscriber traveling in Michigan, sends us a drawing and description—both very good—of the Snow Apple, which he was told was native there. It is the old Pomme de Nèze, or Fameuse, believed to be a native of Canada. It is much grown in Michigan and in other Western States, where it is deservedly prized as a very pleasant autumn apple.

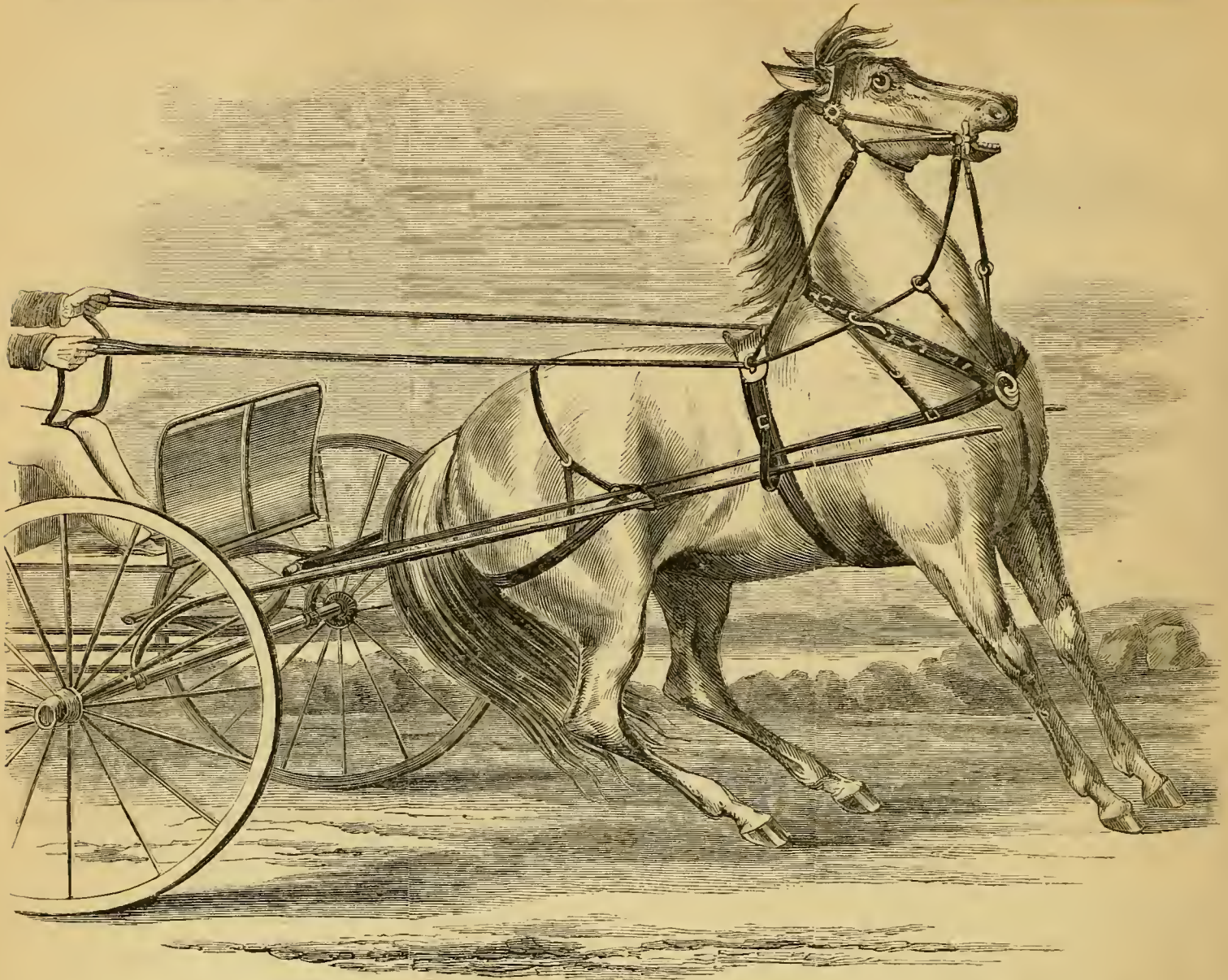
A Movable Trellis.—C. C. Smith, Marshall Co., Iowa, sends us a drawing of a grape trellis which is pinned to permanent posts and so arranged that it can be laid over. It is said to be patented, but the same thing has been in use for other vines than the grape. We doubt its utility for any but young and slender vines.

A “Flowering Willow.”—H. L. Southworth, Utah Co., Utah Territory. We cannot tell what this is without specimens. Send a bit when in blossom. All willows flower, but some are more showy than others.

N. Y. State Agricultural Society.—Annual Meeting.—New Officers.—We were present through the two days, but have room only for an item. The officers elected for 1866 are: *President*: Hon. J. Stanton Gould, of Hudson; *Vice-Presidents*: 1st District, Thos. H. Faile, jr., New York; 2nd, Samuel Thorne, Dutchess Co.; 3rd, Adin Thayer, jr., Rensselaer Co.; 4th, G. A. T. Van Horne, Montgomery Co.; 5th, James Geddes, Onondaga; 6th, Joseph McGraw, Tompkins Co.; 7th, H. T. E. Foster, Seneca Co.; 8th, Horace S. Huntley, Cattaraugus Co., *Cor. Secretary*, Col. B. P. Johnson, Albany. *Rec. Secretary*, Erastus Corning, jr., Albany. *Treasurer*, Luther H. Tucker, Albany. *Executive Committee*: Geo. H. Brown, Dutchess Co.; J. T. Williams, Chautauque Co.; H. W. Dwight, Cayuga Co., Solon Robinson, New York; C. J. Hayes, Otsego Co.; T. L. Harrison; Gen. C. S. Wainwright, and Isaac H. Cocks.

The American Cattle Breeder's Association, hitherto mainly confined to New England in its operations, held its Annual Meeting at Albany, Feb. 15, simultaneously with the N. Y. State Society's Meeting, with the object of enlisting more general interest, and extending its influences to a wider sphere. A considerable number of new members were enrolled, a friendly discussion took place, and officers and committees for the year were chosen. For want of room, this number being already made up on our return, we must defer the names, etc., until the next paper.

Catalogues, etc., Received.—Hargis & Sommer, Star Nurseries, Quincy, Ill. Catalogue ... A. M. Purdy, South Bend (Indiana) Nursery ... J. M. Thorburn & Co., 15 John St., N. Y. Catalogue of Vegetable and Agricultural Seeds ... Frost & Co., Genesee Valley Nurseries, Rochester, N. Y. Catalogue for Spring of 1866. ... Willits Bros., Buchanan, Mich. Catalogue of Small Fruits, with Metcalf's Early Seedling Strawberry as a specialty ... Alfred Bridgeman, 876 Broadway. Catalogue of Kitchen Garden Seeds ... James J. H. Gregory, Marblehead, Mass. Catalogue of Garden Seeds, including several specialties ... John Vanderbilt, 23 Fulton St. Garden, Flower and Field Seeds, Implements, Manures, etc. ... Comstock, Ferre & Co., Wethersfield, Conn., (Hartford P. O.) Catalogue of products of their Seed Farm and Gardens ... John S. Collins, Moorestown, N. J. Catalogue of Small Fruits. ... B. K. Bliss, Springfield, Mass. Catalogue for 1865 and 1866, a large and well illustrated pamphlet, which contains descriptions and directions for culture of flowers, vegetables, etc. ... R. G. Hanford, Columbus, Ohio. Descriptive catalogue of the Columbus (Ohio) Nursery, illustrated. ... Constitution and By-laws of the Hocking Valley (Ohio) Agricultural Society ... Transactions of the Massachusetts Horticultural Society, 1865.



DR. HARTMAN'S SAFETY BRIDLE AND REINS.—Engraved for the American Agriculturist.

Sheep for Illinois.—Lewis Britain, Menard Co., Ill. We certainly doubt not that at present it will pay best to raise wool rather than mutton. The Spanish-American sheep require less care and are generally harder. The best way to get a flock is undoubtedly to procure good sound, heavy fleeced rams of the Spanish Merino or American Merino breeds, and to use them upon young native ewes of good size and shape, selected from healthy flocks. Keep up the flock, by using only good rams.

Making a Ewe own a strange Lamb.—A. P. Taft, Trumbull Co., Ohio, writes as follows: "When you find a ewe with a dead lamb bleating piteously and mourning over it; if you wish to make her adopt another, catch the ewe, milk her own milk upon the lamb, then removing the dead one out of her sight, step back out of the way and witness the joy of the mother at the supposed restoration of her offspring."

Laurel Poisoning again.—"II." writes that the Sheep Laurel or Lamb-Kill (*Kalmia angustifolia*) is injurious even when dry. He had some sheep poisoned by eating hay containing it, and thinks its effects worse than when eaten fresh. He finds the most efficacious remedy to be a strong decoction of senna, to be given in repeated doses until the bowels are moved. We are glad to record at least one remedy that has an appearance of efficacy. "II." further remarks that if lambs have plenty of milk and succulent food, such as turnips, young grass etc., they are not apt to eat enough laurel to hurt them. Here is an excellent chance for some veterinary student to make valuable investigations. If the real action of the poison were well understood, the poisoning could be treated intelligently.

Runaways and Kickers Mastered.

Horsemen have long known that no horse can bear a strong pressure by the bit against the corners of the mouth; and they have employed a cord or reins or a pair of reins passing from the hands (through the rings in the harness) through rings in the headstall and to the bit, in connection with an ordinary pair of reins, to check runaway horses, or to control vicious or kicking ones. These contrivances were so bungling, that they never came much into use, and spirited horses, fit for much better things, were broken in spirit by the lash, and set to some kind of drudgery or tread-mill work, where they soon wore out both pluck and life. Dr. S. B. Hartman, of Millersville, Lancaster Co., Pa., has an invention which gives, in a very pretty and convenient pair of reins, all the ability to stop a runaway horse, to check a hard-mouthed one, to arrest a kicker at the first symptom, just as effectually as the old bungling contrivance alluded to, and very much easier. The above spirited picture shows the effect of these reins upon a horse. The head is thrown up, the eyes lifted so that he cannot see the ground, the weight of the body thrown completely off the fore feet, so that kicking is out of the question, and the animal being thrown upon its hanches, of course must stop; he cannot even back, for the Doctor says, and though we have not tried this, it seems true, that a horse may be made to sit down squarely on his rump. The bit is a simple

snaffle, or plain bar bit, attached to the headstall in such a way that the cheek strap (not buckled into the bit ring, but running through it), may be shortened up almost indefinitely by a pull upon the safety reins. These are attached to the cheek strap, passed up through the bearing or check rein swivels (the rein being removed) and joining the direct reins at the saddle or hames rings, from this point, they pass back to the hands, through the centre of the round driving reins, and terminate in loops and straps. While driving with two hands, the loops may be held by passing the fore fingers loosely through them, and when the driver wishes to use only one hand to drive, the straps of the safety reins hang down in front of his knuckles, and may be seized by the whip-hand at any instant that he wishes to apply their latent power. The safety reins are not borne upon at all in ordinary driving. We have tried them somewhat ourselves, and have placed them in the hands of several experienced horsemen, who agree in their good opinion of them. "Atlanta" is a rather famous trotting mare owned in this neighborhood, so hard-mouthed as to be entirely unmanageable with common reins and bits—with the safety bridle she was driven not only with safety, but with ease, and in her horse way owned "beat," for the first time in her life. In Lancaster County, where the reins have been in use a year or two, we learn that they are regarded with high favor, ladies and children driving horses considered entirely unsafe before they were applied.

Walks and Talks on the Farm.

No. 27.

The 'Squire wants me to put some rotten manure for a foot or two round the trunks of the apple trees. I told him I did not see how it could do them much good. The roots probably extend for ten or fifteen feet on all sides of the trees, and it is principally from the extremities of the roots that the tree gets its food.

To this he replied, "Because in the spring all rain runs down the trunk of the tree and so along the roots to the extremities, and if manure is put around the trunk, the water will carry its fertilizing ingredients to the fibrous roots." Is there any truth in this idea? Our best pomologists recommend enriching the whole land, and so far as I have read, agree in the assertion that manure applied merely for a foot or two about the trunk can do little good. And yet the practice of putting a little manure at the base of the trees is very common. Is there any truth in the 'Squire's explanation?

I must confess that I do not exactly see, in case the whole surface is manured, how the manure gets to the roots. Where orchards are plowed, the roots must be five or six inches below the surface, and it would seem from all the experiments of Way, and confirmed by Liebig, that manures, unless employed in too excessive quantities, do not descend far into the subsoil. We might make the surface soil rich for six inches without furnishing to all the roots of the trees beneath, any nourishment.

If this is true, it follows that the benefit of cultivating the soil among trees is due not so much to its enriching the soil, as to its keeping from the subsoil the roots of plants that would take up the moisture and plant-food that are needed for the roots of the fruit trees. We know that a grain or grass crop seriously checks the growth of young trees, while cultivating the surface of the land favors the growth and fruitfulness of the orchard. If we had some crop whose roots did not go more than two or three inches into the soil, I do not see that its growth would injure the trees. Perhaps beans come as near it as anything we have

I hear that our school-teacher says that Mr. B. told her that "*larnin'* and *farmin'* don't go together."—This is unkind in Friend B., but it does not hit me. Some years ago the workmen of Rochester determined to vote for no one who was not one of their number. They would not have a professional man on their ticket. After the slate was made up, it was discovered, to their consternation, that they had nominated a young lawyer for the office of district attorney. "Oh well, never mind," said their leader, "he is not lawyer enough to hurt him." It is so of my *larnin'*. I think "me and my neighbors" are perfectly safe. If *larnin'* is the only drawback to successful *farmin'*, it will be hard to beat us.

I am not surprised at the prejudice that exists against "book farming." There is good reason for it. As the *Agriculturist* said last month, "Popular science is too apt to be popular error." I have just been reading an article in one of the leading agricultural journals of England, in which the writer betrays an ignorance that is inexcusable. It is a review of the "Sixth Annual Report of the Board of Agriculture in Victoria," one of the Australian colonies. The writer says they are trying "to render the practice of agriculture in strict accordance with modern science, instead of adopting the ruinous system of working the land out by incessantly cropping it with cereals, as is the practice in America." Further on we are told that "the colony at present does not grow wheat enough for its own consumption!" Had we followed the advice of this writer, the same would have been true of America. We may have erred in growing too much grain. It would have been better had we paid more attention to keeping up the fertility of the soil. But those people who are continually harping about "the exhaustion of the soil in Amer-

ica" do not know what they are talking about. The most that can be said is, that we found a soil that had been heavily manured by nature, and that we have grown wheat and other grains till this manure is pretty much exhausted. This is all. The soil is not exhausted. We have hardly as yet made any draft upon it.

But this is not what I was going to speak about. It seems that the great enemy to the wheat plant in Victoria is the *rust*, and a chemist has been employed to analyze the soil, in order to discover the cause. He found, according to our English critic, that in the sections where the rust was most prevalent, the soil was deficient in phosphates. Some of the soils, he says, contained no phosphate at all. If so, there would have been no wheat to rust: for wheat cannot grow without phosphates—and the same is true of grass. I know of no ordinary plant, even a weed, that does not contain phosphates, and if such plants grow on a soil it is proof positive that there are phosphates in the soil, whether the chemist can detect them or not.

On some of the soils he found 0.71 per cent. of phosphates, and these are the only figures given. The writer says "with such a deficiency of the most essential elements of a good wheat soil, it is not surprising that a failure should occur, but rather that wheat should grow at all." Now an acre of soil twelve inches deep would weigh about 3,000,000 lbs., so that if it contained only 0.71 per cent. of phosphates, an acre would contain 21,300 lbs.

A crop of wheat of fifty bushels per acre contains, in grain and straw, about 70 lbs. of phosphates; so that this land, which is said to be so deficient in phosphates, contains enough for three hundred successive crops of wheat of 50 bushels per acre. And this is assuming that the straw is removed from the land and no manure of any kind is applied to the soil! Truly, as Friend B. says, *larnin'* and *farmin'* do not go together. — Mark you, I do not say that a deficiency of phosphates or of lime is not the cause of the rust in wheat. All I claim is that an analysis will not show the fact. The only way it can be ascertained is to apply some phosphates, or some lime, to a portion of the land, and see if it prevents the rust.

In this section, last season, our wheat rusted badly, and had the crop been attacked a week or ten days earlier, the damage would have been quite serious. As it was, except on low, wet land, the rust was confined pretty much to the leaves, and did not appear before the grain was so far advanced that the juices in the straw were sufficient to mature the grain. In the Western States rust very frequently proves a serious enemy to the wheat crop. There is no known remedy. In this case, as in the case of the midge, the great aim should be to get the crop as early as possible.

Why cannot we burn our own lime? On nearly all farms in this section we have abundance of limestone, that by burning makes excellent lime. The cost of a kiln is but little, and on many farms there is enough rough wood that cannot be sold, to burn all the lime needed to manure the land. I am satisfied that we must use more lime. Except in a few localities the practice of liming is almost unknown in our agriculture. I know many people think that where the rocks are principally limestone there is no necessity of liming. But while this may be true in individual cases, it is by no means true as a rule. Land in England that rests on the chalk (which is a soft limestone) is found to be greatly benefited by the application of lime. In the few cases where I have heard of lime being used hereabouts, it has had an excellent effect, the only drawback being its great cost. They ask 25 to 30 cents a bushel for it. In England it is estimated that the farmer can quarry six tons of limestone and burn it, for \$4.00, including interest on capital, tools, etc. These six tons yield about 100 bushels of lime, so that the cost is only four cents a bushel. Where larger and better constructed kilns are used, the cost of burning is much less, though the first outlay is greater. Even supposing it cost us three times as much as this, I believe we could use 50

to 100 bushels per acre with profit. For grass, clover, peas, and barley, there is nothing like lime. The grass is thicker at the bottom, sweeter, heavier and more nutritious. The weeds and moss are choked out, and white clover and valuable grasses take their place.

Relatively to wheat, barley is now lower than it has been for many years. The *Agriculturist* last month quotes barley in New York at 85 cents to \$1.15; and red and amber wheat at \$1.02 to \$2.25; in other words, wheat is worth as much again as barley. Two years ago I predicted* that this would be the case. In 1860, at this time, the best red wheat was worth in New York \$1.30, and the best barley 85 cents. In 1861 red wheat was worth \$1.40 and barley 80 cents. Before the close of 1862 the best red wheat sold for \$1.45, and barley for \$1.60.

Barley is sold by weight at 48 lbs. per bushel and wheat at 60 lbs., so that at the above prices 100 lbs. of wheat and barley were worth:

Wheat.		Barley.		Wheat.		Barley.	
1860 ..	\$2.16 ..	\$1.77	1862 ..	\$2.41 ..	\$3.33		
1861 ..	2.33 ..	1.66	1866 ..	4.25 ..	2.40		

As compared with other grains, except wheat, barley still commands a good price. It is higher here than in England, and we ought to be able to grow it with a profit. The Canadian farmers beat us in raising barley, and yet their soil and climate are no better than ours. They take more pains with the crop. It seems strange, but is nevertheless true, that thousands of bushels of Canadian barley are sent to the large cities of the West. The last number of the *Prairie Farmer* quotes barley in Chicago at from 30 to 60 cents for common to good grades, and \$1.20 to \$1.30 for choice grades of Canada. It would seem from this, that the West does not raise good barley. If the "Reciprocity Treaty" with Canada is not renewed, the probabilities are, that barley of prime quality will command a high price next fall, and we shall be safe in putting in a good breadth this spring.

The great difficulty in raising barley is, to get it in early enough. The land should be rich, and as mellow as a garden. A good, strong loam, if thoroughly pulverized, produces heavier crops than the lighter soils. But a light, warm, dry, sandy loam, if rich enough, generally produces the best barley, for the reason that it is difficult to get the heavier soils in fine tilth early in the season. On the light soils, a little artificial manure, if it can be obtained of good quality and at a fair price, can be used with great advantage to the barley crop. It will increase the yield and improve the quality—and it is *quality* that should be the principal aim. Think of common barley selling in Chicago at 30 cents per bushel, and choice at \$1.30! I think 100 lbs. of genuine Peruvian guano, mixed with 200 lbs. of a good superphosphate, would, in a fair season, on dry, well prepared land, sown early, give us from 40 to 50 bushels of barley per acre.

One of my neighbors was telling me yesterday, that he intended breaking up an old meadow this spring, and summer fallowing it for wheat. I advised him not to do it. I did the same thing two years ago; I broke up an old meadow in June and summer-fallowed it at considerable expense, and did not get as good a crop as I did from wheat sown after barley. A farmer near Canandaigua says he observed the same thing. John Johnston also writes me on the subject. He says: "I noticed some time ago, that you stated your wheat was not so good on your old sod-fallow as on your barley stubble. I often thought to write that I never got a really good crop of wheat on old sod fallowed, but have had good crops on old sod by plowing only once, and keeping the surface mellow with the cultivator and harrow. But a better way is, to take a summer crop from old sod and fallow the following year. This is almost sure to give the very best wheat crops. My practice for over 27 years was to keep my best wheat land in fallow and wheat alternately—sowing clover among the

* "Walks and Talks" in *Genesee Farmer*, 1864, p. 203.

wheat in spring, pasturing lightly in autumn, and heavily with sheep the next spring, till I got it plowed. In this way I did well.

"Fallowing is the true way to raise good wheat crops, at least on clay soil. Still, if manure enough can be obtained, it is more profitable to take a barley crop and sow the stubble with wheat—the barley crop getting the first chance of the manure. Wheat does not require much manure, but I never yet gave spring barley too much. I had nearly 40 bushels of spring barley per acre last year."

It is not common to apply manure directly to the barley crop, except artificial manure; it is not convenient to do so. Barley is usually sown after corn, and the manure is applied to the corn. I presume this is the plan adopted by Mr. Johnston. He puts the manure on the grass the fall previous, and then plows up the sod in the spring and plants corn, followed by barley and then wheat. It is not considered a good plan to grow three grain crops in succession, but if you can manure highly enough, and cultivate the corn thoroughly, there is no objection to it. If the land is not rich, however, better seed down the barley in clover and let it lie one or two years, and then break it up for wheat. If you like, the wheat can again be sown with grass and clover, or it may be followed with barley.

Clover is our great renovating crop. We cannot sow too much of it. We should grow our own seed, and sow it as often as possible. One of my neighbors threshed his clover seed a few days ago and got 12½ bushels of clean seed from 2½ acres. From the same land, before letting the clover grow for seed, he cut 14 good two-horse loads of clover hay. Such a crop pays better than wheat. All he did to it was to sow a bushel of plaster per acre on the clover last spring.

One of my horses sprained the muscles on the inside of his thigh. He was quite lame, and apparently in considerable pain. The leg became hot and swollen, and I was afraid he would be laid up for several weeks. It is a bad place to get at. Knowing that there is nothing so good for a sprained ankle as pouring cold water on it, I got the hydropump and forced a stream of ice cold water on to the inside of the thigh. It seemed to relieve the pain at once. I repeated it every few hours, and in three days the horse was entirely well and at work again! Great are the virtues of cold water.

I have just sold one of my little pigs. They are not quite four months old and the one I sold weighed 117 lbs. Is not that pretty good? I got \$17.50 for her, while a farmer in the neighbourhood sold some of his last month that are about the same age, at \$7.00, and thought he had got a good price. So much for a little blood.

In the neighborhood of large cities, where fresh pork is in demand, the small breeds of pigs, such as the Essex and Suffolk, are more profitable than the large breeds. I question if we can compete with the West in the production of heavy hogs for packing or for bacon. Dressed hogs the past season have not brought in Rochester over half a cent a pound more than in Chicago, while the corn on which they feed is twice as high. In most of the interior towns in the far West, corn is not worth over 20 cents a bushel, and in some not over 10 cents, while here it is from 75 to 80 cents. Can we feed hogs and compete with the West? In raising nice, fresh pork for the butchers in spring and summer, we are not brought in competition with the West, and this is the kind of hog-raising that will pay. You want a breed that will fat at any age, from six weeks to six months, that you can have ready at any time the butcher needs them.

In the *Agriculturist* last month there is a table showing the amount of produce exported from New York during the last seven years. It seems that in 1859 the total amount of wheat exported was only 297,587 bushels. The next year we exported over thirteen million bushels! and in 1861 nearly twenty-nine millions. Have we ever exported so large a

quantity in any single year before? In 1862 we again exported twenty-five millions, and in 1863 fifteen millions; in 1864 twelve millions, and in 1865 only two and a half millions. This is a great falling off as compared with the four years previous, but it is more than I expected. I think most of it must have been exported early in the year and is in reality a part of the crop of 1864 rather than of 1865.

But is it not remarkable, that during the four years from 1861 to 1864, while we were engaged in a most gigantic war, we were able to spare, and did spare, over 82,000,000 bushels of wheat, besides flour equal to 50,000,000 bushels more; or in all, 132,000,000 bushels of wheat! These figures show how much the country was indebted to its agriculture for the means to carry on the war.

The export of Indian corn last year was over 4½ million bushels as compared with 846,831 in 1863. The English farmers are beginning to appreciate our corn as a food for fattening stock, and doubtless the demand will continue. One of the leading English agricultural papers recently asserted, and unquestionably with truth, that Indian corn is the cheapest food the farmers can purchase, and that there is no sense in their paying \$55 per ton for oilcake, when a ton of corn can be had for \$33. There is an unusually large quantity of corn in warehouses and in the hands of farmers, and we can meet any demand that can be made upon us. With the high price of meat, however, it would be well to feed it out at home more liberally. What a shame it is to send lean cattle to market when good beef is so high, and the means of fattening it so abundant. In Chicago, inferior cattle are sold as low as 3¼ cents per pound, while choice fat cattle bring from 7½ to 8 cents. A steer weighing 1200 lbs. in the one case would bring \$96, while one weighing 1000 lbs., if sold at 3¼ cents, would bring only \$32.50. Now, I do not say that the addition of 200 lbs. of flesh and fat would convert one of these "scallawags" into choice beef, but it would certainly go far towards it.

We must pay more attention to breeding cattle. There is a crying necessity for well bred stock. Greatly as our cattle have improved within the last fifteen or twenty years, it is still difficult to find a good well bred steer. The majority of animals are so ill bred, that it is impossible to fat them till they are four or five years old. Now how much does it cost to keep a steer two years? It seems to me, that this sum, varying in different localities, say from \$40 to \$75, is the difference in the profit of feeding a good and a poor animal. Is there any error in this statement? I do not ask for thoroughbreds, only for grades. It may cost fifty cents or a dollar more to obtain such a calf, but will it not pay?

I do not know of a first-class Shorthorn bull in this county. A few years ago a liberal-minded gentleman purchased one from Mr. Sheldon, and kept him a year or two; but the farmers begrudged the extra 50 cents, and the gentleman sold his bull in disgust. Had he kept him a few years longer, until his calves showed their superiority, he would have been appreciated.

"But the Shorthorns are not good for milk!" Some of them are not. They have been bred for beef. But a cross with our so-called "native" cows often produces excellent milkers, and if any of them prove poor, they can readily be disposed of to the butcher. I was talking to Lewis F. Allen about this matter the other day, and he says he knows no way in which we can so readily and so surely obtain a good herd of dairy cows. Use a thoroughbred Shorthorn bull, raise all the calves—and they can be raised on very little milk—and then if the heifers prove good milkers they will be very good. If they do not, fat them for beef.

I saw a statement the other day in an English paper, of a farmer who lives in a dairy district, that bought the calves from his neighbors when a few days old, and raised them by hand. By buying them at different times, he said he had raised as many as fifteen calves on the milk of one cow. He gave them a little new milk for a few days, and af-

terwards skimmed milk, with the addition of linseed tea, scalded meal, etc. This practice might be adopted here. Get a good Shorthorn bull, and then buy the calves when a few days old. It would pay.

Something that Will Pay.

Every cultivator ought to raise enough first-rate seed of all his staple crops to at least supply his own needs. But comparatively few will give the extra care in cultivation, selection, etc., necessary to secure a prime article, and hence choice samples always have a ready demand, at top prices. Here is an opportunity for some one in every neighborhood to make money. Select some one or two staple articles, and make a specialty of raising them for seed. Each year, sow or plant none but the best, place it under the most favorable conditions possible, as to exposure, soil and cultivation, and in a few seasons by judicious management a grade may be reached and a reputation be made that will give a rich return. Whoever could to-day offer 500 bushels of oats, barley, or spring wheat acknowledged to be the best of their kind in the country, could command his own price, within reasonable limits, and perhaps a little beyond.

The Uses and Management of Cold Frames.

BY PETER HENDERSON, JERSEY CITY.

We use cold frames for preserving cauliflower, cabbage and lettuce plants during the winter and the forwarding of lettuce and cucumbers in spring and summer.

To make the matter as clear as possible, we will suppose that the market gardener, having five or six acres of land, has provided himself with 100 of 3×6 feet sashes. The cauliflower, cabbage or lettuce plants which they are intended to cover in winter, should be sown in the open garden from the 10th to the 20th of September and when of sufficient size, which they will be in about a month from the time of sowing, they must be replanted in the boxes or frames, to be covered by the sashes as winter advances.

The boxes or frames we use, are simply two boards, running parallel and nailed to posts to secure them in line. The one for the back is ten or twelve inches wide, and that for the front seven or eight inches, to give the sashes, when placed upon them, pitch enough to carry off rain and to better catch the sun's rays. The length of the frame or box may be regulated by the position in which it is placed; a convenient length is fifty or sixty feet, requiring eighteen or twenty sashes.

Shelter from the North-west is of great importance, and if the ground is not sheltered naturally, a board fence six feet in height is almost indispensable. The sashes should face South or South-east. Each sash will hold five hundred plants of cabbage or cauliflower, and about eight hundred of lettuce. These numbers will determine the proper distance apart, for those who have not had experience. It should never be lost sight of that these plants are almost hardy, and consequently will stand severe freezing without injury; but to insure this condition they must be treated as their nature demands, that is, that in cold weather, and even in clear winter days, when the thermometer marks 15 or 20 degrees in the shade, they must be abundantly aired, either by tilting up the sash at the back, or better still, when the day is mild, by stripping the sash clear off. By this hardening process, there is no necessity for any other covering but the sash. In our locality, we occa-

sionally have the thermometer from 5 to 10 below zero for a day or two together, yet in all our time we have never used mats, shutters, or any covering except the glass, and I do not think we lose more than two per cent. of our plants. Some may think that the raising of plants in this manner must involve considerable trouble, but when they are informed that the cabbage and lettuce plants so raised and planted out in March or April, not unfrequently bring a thousand dollars per acre before the middle of July, giving us time to follow up with celery for a second crop, it will be seen that the practice is not unprofitable.

But we have not yet done with the use of the sashes; to make them still available, *spare* boxes or frames must be made, in all respects similar to those in use for the cabbage plants. These frames should be covered up during winter with straw or leaves in depth sufficient to keep the ground from freezing, so that they may be got at and be in proper condition to be planted with lettuce by the end of February or 1st of March. By this time the weather is always mild enough to allow the sashes to be taken off from the cabbage and lettuce plants, and they are now transferred to the spare frames to cover and forward the lettuce. Under each sash we plant fifty lettuce plants, having the ground first well enriched by digging in about 3 inches of well rotted manure. The management of the lettuce for heading is in all respects similar to that used in preserving the plants in winter; the only thing to be attended to, being to give abundance of air, and on the occasion of rain to remove the sashes entirely, so that the ground may receive a good soaking, which will tend to promote a more rapid and luxuriant growth.

The crop is fit for market in about six weeks from time of planting, which is always two or three weeks sooner than that from the open ground. The average price for *all* planted is about \$4 per hundred at wholesale, so that again with little trouble our crop gives us \$2 per sash in six weeks.

I believe this second use of the sash is not practised outside of this district, most gardeners having the opinion that the winter plants of cauliflower, cabbage or lettuce, would be injured by their complete exposure to the weather at as early a date as the first of March. In fact, here we have still a few old fogies among us, whose timidity or obstinacy in this matter prevents them from making this use of their sashes, and thereby causing them an annual loss of \$2 per sash, and as some of them have over a thousand sashes, the loss is of some magnitude.

In my own practice, I have made my glass do double duty in this way for fifteen years; the number when I first started being fifty, increasing to the present time, when I have in use fifteen hundred sashes. Yet in all that time I have only once got my plants (so exposed) injured, and then only a limited number, which I had neglected to sufficiently harden by airing.

We have still another use of the sashes to detail. Our lettuce being cut out by middle of May, we then plant five or six seeds of the Improved White Spine Cucumber in the centre of each sash. At that season they come up at once, protected by the covering at night. The sashes are left on until the middle of June, when the crop begins to be sold. The management of the cucumber crop as regards airing, is hardly different from that of the lettuce, except in its early stage of growth it requires to be kept warmer; being a tropical plant, it is very impatient of being chilled, but in warm days airing

should never be neglected, or the concentration of the sun's rays on the glass would raise the temperature to an extent to injure, if not entirely destroy the crop. This third use of the sashes I have never yet made so profitable as the second, although always sufficiently so to make it well worth the labor.

There are a few men here who make a business from the use of sashes only, having no ground except that occupied by the frames. In this way the winter crop of cauliflower or cabbage plants are sold at an average of \$3 per sash, in March or April; the lettuce at \$2 per sash in May, and the cucumbers at \$1 per sash in June, making an average of \$6 per sash for the season; and it must be remembered that these are wholesale prices, and that too in the market of New York, where there is great competition. There is no doubt that in hundreds of cities and towns of the Union the same use of sashes would double or treble these results.

Cotton Planting by Northern Men.

There has been a great mystery thrown about cotton culture by some of the writers on the subject, and this is in some measure seen in the only manual on that subject, by Turner. (See Book-List.) The fact is, cotton is just as easy to cultivate as corn, and nothing like so hard to grow as tobacco.

It needs a deep, well-worked soil, moderate enrichment, and clean culture. It is a hardy, vigorous plant, bearing almost any amount of neglect if it gets a good start, and even when quite small—a mere seed-leaf plant—is no more delicate than beans. Were the planting left altogether to unthinking workers, (no one knowing whether one seed in twenty would grow, or that all would not,) they would be very likely to drop handfuls of seed where a dozen would answer, or scatter them in the drill as if they were distributing a fertilizer. This they did, and it is no wonder that the puny crowded plants, left weeks without being thinned out, convinced "Massa" that he had a very delicate and tender plant (or *weed*, as they call the cotton plant at the South) to deal with.

The land should be such as is capable of good tilth—that is, such as will become somewhat mellow, at least friable when well plowed and harrowed. Very light sandy land is unsuitable, unless it be compacted by a considerable amount of vegetable matter, as a sod of young grass and clover, the growth of the fall and winter, and such land may be well plowed in the spring and not in autumn, in order that this vegetable growth may be secured. On ordinary loams the plowing ought to be done in the winter to save time, but with good plows, put down quite as deep or a little deeper than former tillage has gone, spring plowing will do equally well. If possible, follow the plow with a sub-soil plow, running once in each furrow, for the cotton plant sends down a strong tap-root into the subsoil, and it is desirable that the way should be opened, especially in compact soils. The ground being plowed and harrowed, and allowed to settle awhile, a short time before planting it is marked off in squares, or ridged for seeding.

Should the land be in poor heart and stable manure or compost be at hand, this should be spread and plowed in at the first plowing as for corn; in fact, the soil should receive much the same treatment as for a corn crop, bearing in mind always, that while corn is a very rank feeder and will bear any amount of manure, cotton is apt to run to leaf and stalk and not to

fruit if too much stimulated. If manuring is to be done in the drill, the drills should be opened full four inches deep, the compost spread evenly and then covered by a broad surface furrow cast from each side upon it, forming a flat ridge upon which to plant the seed. Any good compost will be available here, such as bone dust, ashes, cotton seed (which has been fermented to prevent germination), guano, superphosphate, etc., either alone, or such a mixture as one has made by mingling with vegetable mold or soil to secure even distribution.

The seed should be tested before planting, in order to know with some accuracy what percentage of it will germinate. To do this, count out ten parcels of 100 seeds each and sow them in cigar boxes or similar things, sinking them in the warm earth on the south side of a white fence or wall, in March or early in April; cover them with a board in case of soaking rains, but give them the benefit of all the sunshine. It is very important to have a good sort, but it is still more so to have seed that will grow, and new comers will be very likely to be imposed upon.

The distance at which the rows should be, varies as much as does the distance at which we plant corn at the North, and it depends upon the strength of the soil and the length and moistness of the season. The beginner must be guided, more or less as his judgment dictates, by the customs of the country. The aim is, to have the plants when they get their growth, cover the ground, and interlock on all sides somewhat, but not enough to prevent getting about amongst them easily. On some land they will do this if planted 4 feet each way, while in other places the rows are three feet apart and the plants 15 to 20 inches in the rows. Only one plant is left in a place, though half a dozen or more seeds are planted. The planting may be done by any good corn planter, if the land is cultivated flat, but if in ridges or "beds," the seed must be dropped by hand, or with the hand corn planter, which, if the seed is clean, and especially if soaked in brine or urine and rolled in plaster or lime, will work very well. Poorly ginned seed, which is covered with fur, must of necessity be dropped by hand.

The planting ought to be done, as a general rule, in April, though good crops are often made if planting be delayed until May. The plants ought to get a good start before hot weather, for the drouths do not check them, if the tap-roots are well down in the moist subsoil.

As soon as the plants appear, the field should be gone over, and any grass or weeds close to the plants taken out, and the plants themselves thinned to about three in each place. The grass will soon start and must be kept down at all hazards. There are seedling grasses, which during the moist weather of spring start up with white clover everywhere that the soil is broken, and are very damaging to any crop. We advise the use of good steel-toothed cultivators, followed by sharp, light bladed hoes. Light harrows would do good service also, especially the pole harrow, and indeed any of the implements for corn would answer well for cotton. The principle is the same, viz.: *Clean Culture*.

Our own prejudices are much in favor of flat culture on dry land; and where hands are scarce, we surely would plant so as to run the plow and cultivator each way. Each time it is plowed or tilled by horses, it should be gone over with hand hoes, to make sure that plants are not covered up and that grass is not left among them. After the first or second hoeing, as the case may be, only one plant is left in a place,

provided it has by that time gained sufficient woodiness of stalk to resist the attacks of the wire worms, which are sometimes annoying. The subsequent culture of this important crop may properly be the subject of articles later in the season. In the meanwhile, any hints from those interested in this matter, which will be of benefit to our readers, will be gladly received.

Board Fences.

The questions proposed in the November *Agriculturist* (page 336) have been kindly responded to by several experienced fence builders. Some have answered the questions; others have given figures and descriptions of fences. We here call attention to some of these plans.

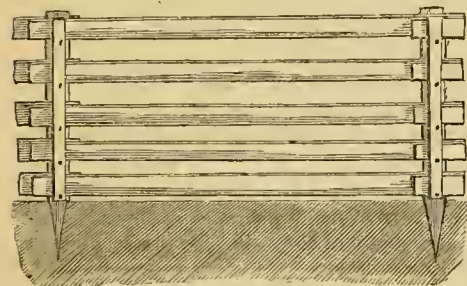


Fig. 1.

Mr. H. T. Richmond, of Chenango Co., N. Y., presents two, represented by figures 1 and 2, which he describes as follows:—"Fig. 1 is a straight board fence, 4½ feet high, and the advantages I claim over the common board fence are as follows: It is substantial, tasteful, economical, easily built, easily moved, and any length may be taken out like a pair of bars. If the posts heave out, they can be driven down again. No nails are driven through the boards, consequently the lumber is not injured for any other purpose; and on flowed lands the boards may be taken out in the fall, and put in again in the spring. The materials are as follows: Boards, chestnut or pine, 11 feet long, 6 inches wide; posts, chestnut or oak, 7 feet long, round or half-round, split or square, sharpened and driven 2½ feet into the ground, 10 feet apart; cleats, chestnut or oak, 4½ feet long, 2 inches wide, 1½ inch thick; nails, one six-penny nail to each board.

"Fig. 2 is a straight picket fence, 3 feet 10 inches high, tasteful and economical. Posts, 6 feet long, 10 feet apart; rails, 11 feet long, 2×3 inches; pickets, 3 feet 10 inches long, 3 inches wide, 1 inch thick; 2 seven-penny nails to each length. To rebuild either of these fences where decayed, split open the old rotten posts to get the nails, and then set up the lengths and fasten them with nails and cleats to the new posts."

Mr. Wm. Day, of Morris Co., N. J., sends a sketch of a fence (figure 3), and writes: "In

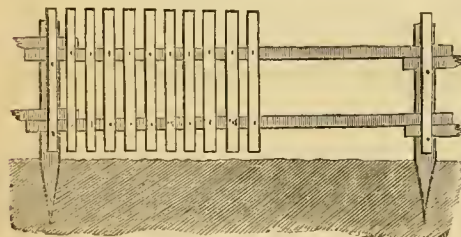


Fig. 2.

answer to your queries about fences, I send the following as the result of my own experience and observation, combining, in my judgment, economy, durability, and neatness for a farm-fence, in a remarkable degree. I would have what is called with us, a running or strip fence.

"Posts.—In our section of country, chestnut timber for posts is preferred to any other. The posts are sawed 7 feet long, 4×5 inches at the bottom, and 3×4 at the top, and all set 4 feet 2 inches above ground, 8 feet apart. They should be cut in winter when the sap is down, for they will thus be lighter to cart and handle, and dry out quicker. They may be set as they grew, or reversed, whichever way they will saw to the best advantage. I never believed there was gain enough in durability, secured by inverting posts, to balance the necessary waste in sawing.

"Boards.—For strips we employ hemlock, sawed one inch thick and 16 feet long. Two courses of 7-inch strips at the bottom, 5 inches apart, and two courses of 5-inch strips, 8 inches apart, starting 5 inches from the ground, will make the fence 4 feet 2 inches high, as required. A cap rail or strip is not necessary for strength, but gives the whole a neater appearance. If used, it may be sloped to turn rain more readily. No fixed rule is necessary for this. Each board will require 6 ten-penny nails, driven 1½ inches from the ends and edges. Break joints by all means, to secure strength, and I hold a batten to be absolutely indispensable."

Mr. Peter H. Storm, of Columbia Co., N. Y., writes as follows, sending fig. 4 as the style of fence he prefers: "The questions proposed could be more readily answered, if the nature of the soil were specified, whether stony or liable to be thrown up by frost. My experience is that common post and board fence is the best in every particular. It costs least both in materials and labor; lasts longest with the least repair, and if properly constructed, will turn any stock usually kept on a farm. If the soil does not throw up by frost, I usually take for



Fig. 3.

posts good straight rails, 13 feet long (chestnut preferred), and saw them in two. These cost here about \$10 per hundred, which is 5 cents per post, or 10 cents per length. Sharpen them and drive with a flat-faced sledge 2½ feet in the ground, after making a hole with a crow-bar. Some of them may require a little trimming in order to present a good face to nail upon, which is readily done with a common axe. In one day two men can make as much and quite as durable fence as eight men can in the same length of time, if working in the ordinary way of digging the holes, etc. Let each man have a hammer, with the spaces marked on the handle, so that no mistake may occur in placing the boards. I do not batten the ends of the boards, nor for common field fence do I cap the same, but I think the latter will well repay the trouble of sawing the posts off, which should be done at an angle of about 70°. I use the narrow hemlock fence board, which varies from 4 to 8 inches in width, putting the widest at the bottom, about 8 inches above the ground. I use fence 8-penny nails, six nails to the board.

"The very best time to cut the posts is, I think, in the month of June, when the bark peels off very readily; they should stand to

season until the next spring; but if sharpened when cut, and the points placed upward in the sun, they will dry sooner and will answer for fall setting. I do not usually prepare the posts, though I think charring would pay were sufficient care exercised to prevent the points being injured for driving. After the line of fence is made, take a plow and turn a few furrows on either side of the fence, to make a ridge

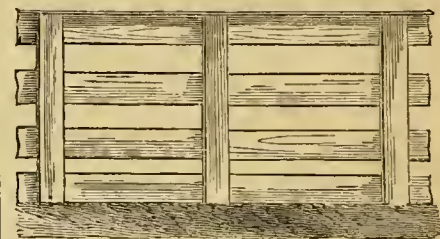


Fig. 4.

to fill the 8-inch space under the lowest board. The ground should be compressed with the foot, and if necessary the shovel should be used, in order to raise a good ridge. It is best, I think, to reverse the posts, which should be attended to in the sharpening. From 40 to 60 rods can be made by two men in a single day. Should the soil be inclined to heave by frost, raise the bank 20 inches, or more if necessary, after the posts are driven; and put but three boards to the length. This will make a very pretty as well as lasting fence. The lowest board should be close to the ground, as the bank will settle."

Reclaiming Salt Marshes—Tide-gates.

In the February *Agriculturist* we had an article upon reclaiming salt marshes, dwelling especially upon making the dikes. Now, the dike is very important, but good for nothing without a good gate. A Tide-Gate is one constructed in connection with a flume of some sort, so that when the tide is out, the fresh water which may have accumulated, may easily flow off, but which will be closed tightly by the rising tide, so that no salt water can flow back upon the meadow. The size of the flume and gate should be sufficient to let off, in a short time, all the water that will ever be likely to accumulate during severe storms or thaws; and concerning this, one may easily judge by estimating the surface of country drained, and the amount of water which flows from springs and brooks discharging into the ditches of the reclaimed marsh. This may be more easily done by causing all the water to flow through a trough or other contrivance, while the dike is being built. Stone culverts are better than wooden trunks, because the muskrats do not follow stone work, while they are almost sure to burrow along by the side of, or under wood, often letting in the salt water in

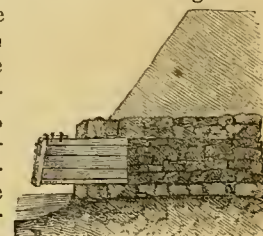


Fig. 1.

a ruinous way; and as these are the great pests of the reclaimer of salt marshes, it is best economy to provide fully against them.

We represent in the accompanying illustrations longitudinal sections of three different kinds of tide-gates. The first, fig. 1, shows a stone culvert supposed to be about 18 inches high, and of the same width. It is built of faced stone, laid in cement, and upon a good foundation bedded in the hard-pan bottom, or



GROUP OF TWO-YEAR-OLD AND YEARLING COTSWOLD EWES

upon a "puddling" of clay; clay is also well packed about it. The exterior end of this culvert receives a trunk of 3-inch oak plank about 3 feet long, solidly cemented in. The gate is hung upon the exposed end by heavy yellow-metal butts screwed upon the top of the trunk or flume, and let into the inner face of the gate, which is made of two courses of plank placed crossways and fastened by copper or composi-

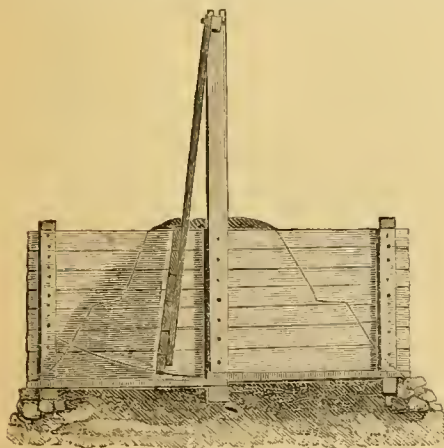


Fig. 2.

tion nails. The end of the flume is made slanting so that the gate shall naturally shut close when the tide is down. The objections to this form are that sticks, etc., sometimes prevent the gate shutting tightly, and the hinges being half the time under water rust out in time, need to have the bolts renewed frequently, and are otherwise subject to corrosion from the salt water.

The second illustration (fig. 2,) represents a deep open flume, in which is a swinging gate, having a wooden hinge high above the water. The flume is supposed to be about 18 inches or two feet wide, and 5 or 6 feet high (as high as the top of the embankment.) It is made of heavy planks, the sides being nailed upon the

outside of frames made of 6×4-inch studs, and the floor being laid upon the top of the framesills. The uprights of one of the frames, in this case the middle one, rise to the height of several feet (6) above the flume, and upon these the gate is hung so that it shall shut snugly against the posts and the inner course of floor planks, on which a thin sill may be spiked. Gates of this kind work very well, but should be well protected against the muskrats burrowing under them. The seams are made tight by caulking and pitching if necessary. One especial advantage of this form of gate is, that a grating or perpendicular paling at each end of the sluice will exclude drift wood, hay, etc., from clogging the action of the gate. Figure 3, shows a combination of the two plans, the posts upon which the gate swings being set in the ground or in masonry. A gate like this may be hung in a flume against the mouth of a trunk, that is, a flume for the protection of the gate may be erected on the outer end of a culvert, or box flume like figs. 1 and 3, and the gate may then be suspended as shown, a plan we are inclined to prefer, though we have never observed it in actual operation as we have the other forms.

All these gates must be protected against the gnawing of muskrats, by sheathing the exposed parts with copper. The rats will enter the sluices from the inner side and gnaw the bottoms of the gates, and the contiguous parts of the box; they will probably also gnaw upon the outside. Strips of copper ship-sheathing a few inches wide, nailed on over the end of the box near the bottom, and upon the lower part of the gate to match, will form an efficient guard, and this should by no means be neglected.

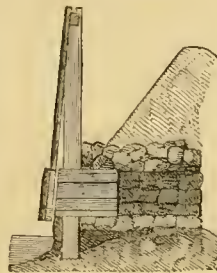


Fig. 3.

Long-Wooled Sheep.

We frequently have occasion to refer to the long-wooled sheep as making excellent crosses with common ones, for heavy mutton and early lambs. The breeds best known in this country are the Leicesters and Cotswolds. The Lincolns are another breed of this group which were introduced some years ago into this country, a flock having been kept and highly esteemed in Duchess County in this State, 30 or 40 years since; but they have been allowed to run out, and we have heard of no recent importations. They are probably the largest sheep in the world, and are hardy, but not so well formed, nor so good feeders, as the improved Leicesters, and the Cotswolds. We present an engraving of a group of beautiful Cotswold two-year-old and yearling ewes, from the flock which swept all the prizes in several classes at the New England fair last autumn. They are the property of Mr. Burdett Loomis of Windsor Locks, Conn., who has recently added to the value of his flock by the importation of some very excellent sheep and rams. The Cotswolds are large sheep, often attaining very great weight. (We saw at Christmas time the carcass of one which came from Canada, and was killed by Bryan Lawrence of Centre Market, the dressed weight of which was 243 lbs.) They fat easily; the wool is long, not fine compared with the felting wools, but delicate and silky, and in great demand, selling now at a higher price than common merino fleeces. It is very free from oil, hence the sheep should have shelter and good care. The fleeces weigh 6 to 10 lbs., rams' fleeces sometimes reaching 18 lbs. These sheep are moderately prolific, adapted to rich pastures, and the fat is much better distributed upon the carcass than is the case with some other long-wooled breeds. The quality of the mutton is inferior to that of the South-Downs and other middle-wool sheep, but rich, juicy, and always has a ready market.

Spavin, Curable and Incurable.

Every agricultural editor has almost constantly sent to him for publication, *cures for spavin*, attested in all sorts of ways. Some writers give descriptions of their mode of procedure, and of the very satisfactory results attained; others send simply recipes. We know it will be very hard to convince a horse owner, who has "doctored" his own and perhaps his neighbors' horses for what he calls spavin, and cured them, that true spavin is an utterly incurable disease. It seems as if every disease of the hock were called spavin, without any discrimination whatever, whereas this name is properly applied to only one. Spavin is an enlargement of the bone or bones on the lower, inner and front side of the hock joint, or an ankylosis,—a growing together of these bones without enlargement of the joint—as in occult spavin. This growth of bone, gradually in many cases, increases until the entire joint, except in its articulation with the leg-bone (the one above the joint), becomes perfectly inflexible, in fact, almost as one solid bone.

There are ten bones composing this joint, which corresponds with the heel in man; they are all capped or enclosed with elastic cartilage, which protects them from concussion and friction; and between and about the bones thus covered, lies the synovial membrane, the office of which is to secrete a fluid to lubricate the joint, so that the machinery shall play smoothly. Over the joint in several places pass the strong tendons of muscles, which move the leg below the hock, and these are bound down to the joint by very strong investing ligaments, under which they glide freely.

Severe pulling, leaping, wrenching of the leg, and other causes, may bring on an inflammation of this structure, which, being neglected and communicating to the bone, causes osseous enlargement. In some cases it is at once indicated by lameness, or by an inability to carry the foot naturally, when first taken from the stable; at others it can only be seen or felt when carefully observed. In any case it is dangerous, and may grow worse,

even when consisting merely of what the horse dealer will call a "juck," that is, a little enlargement on the inner side of the hock, or upon the head of one of the splint bones. (One of these splint bones may be seen as a slender pointed bone, large at the hock, and extending more than half-way to the fetlock—sound, in fig. 1, and much diseased in fig. 2.) Any enlargement of the bones of this joint is liable to cause lameness, because they are so crossed and pressed upon by tendons; but the lameness thus caused is always most evident when the horse is first taken from the stable, and often disappears entirely after the animal warms up with exercise. For this reason a spavined horse, if for sale, is

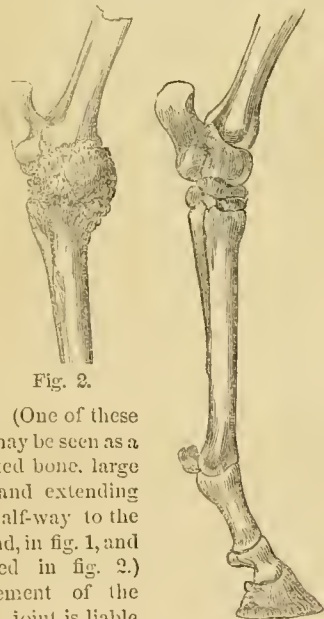


Fig. 2.

Fig. 1.

never shown in the stable, but always upon the road, and after he has been driven awhile.

By examining the two engravings we present, the nature of the disease may be distinctly comprehended. The drawings were made with great care from specimens kindly loaned to us from the museum of the N. Y. College of Veterinary Surgeons, on Lexington Avenue. Fig. 1 shows the bones sound and healthy; fig. 2 represents a very bad case, of course. Spavin prevents the free flexion and extension of the limb. The front of the shoe is usually unnaturally worn off, and often the toe of the hoof is worn by dragging. For any inflammation or heating of the hock, whether obviously spavin or not, give rest, good food, not of a heating quality; bathe the joint in cold water, either simple or containing saltpeter or sal-ammoniac in solution, keeping it constantly wet and cool. Should bunches appear and not subside under this treatment, the usual practice is to excite the skin by liniments or blisters, and to apply subsequently an ointment containing Iodine, or some of its compounds. But if a veterinary surgeon of ability is within reach, by all means consult him. If not, talk with your family physician, and exercise common sense.

Spavin does not render a horse useless for a long time, but it makes him unsalable, and is so hereditary that a spavined mare ought not to be used for breeding, and certainly no spavined stallion should be employed as a stock getter.

Occult Spavin begins with an inflammation, leading to ulceration and ankylosis of the joint; exterior signs are obscure, but the horse manifests extreme pain. The treatment is rest in a sling, so that all weight is taken from the joint, and such external appliances and diet as common sense, in the absence of a good veterinary surgeon, will dictate. We have no experience and shall not attempt to prescribe. The disease is unhappily both frequent and distressing, in some cases resulting in the union into one solid mass of the four little bones which rest upon the tops of the metacarpal (cannon and splint) bones. Of course permanent and incurable lameness is the result.

Bog Spavin.—This disease is recognized by the formation of a sack of liquid on the front of the hock-joint, and is caused by an unnatural increase of the synovial fluid, which, as we have said, lubricates the joints. It is unsightly, but does not ordinarily cause lameness. With good usage it is sometimes, though rarely, absorbed, and this may be expedited by the application of an elastic bandage over the part, when the horse is at rest. This puffy swelling, usually caused by strains and wrenches, is not for a moment to be confounded with true spavin. "Blood" spavin is a misnomer.

How to Clean Seed Wheat.

There are sometimes seeds of charlock, winter-cress, cockle, chess, dock, pigeon weed, oats, and some other kinds among seed wheat. Besides the seeds of weeds, the small shrunken and immature kernels should be separated, and the largest and fairest only retained. The small shriveled grains may vegetate as readily as the plump ones, but the ears will not be so long and large, nor the kernels so plump and fair.

If a person has nothing but a common fanning mill for cleaning seed wheat, the sieves can usually be arranged to separate every thing from the best grain. If there be nothing but charlock, cress, or dock seed among the wheat, by carrying the grain out on the screen board so far that

it will fall near the upper edge of a coarse screen, every kernel of small wheat and seeds of weeds will fall into the screen box, and the choicest grain will be delivered on the floor, or in the appropriate grain-box. After such seeds have been separated, should there be oats among the seed wheat, a sieve made of perforated tin, or zinc, should be placed in the lower gain of the shoe, and the wheat put through the mill again. The perforations in the zinc should be just large enough to allow the largest kernels of wheat to drop through, while the oats being longer than the diameter of the holes, will slide over them and be collected in a box or on the floor by themselves. Perforated zinc, or pressed wire cloth for sieves, may be obtained at hardware stores, and be fitted to any mill. Repeated winnowing with a strong blast will, each time it is repeated, separate additional light grains, and improve the quality of the seed grain.

Coal Tar on Fence Posts.

The subject of preserving fence timber, though often discussed, is still one upon which the light of new facts and experience is always welcome. Mr. Gilbert J. Greene, of Rensselaer Co., N. Y., writes:—"I have been requested by several readers of the *American Agriculturist*, to make a short statement of my experiments and experience in preserving fence posts, water pipes, making roofs, floors, etc., by the use of coal tar. As your room is too valuable, perhaps, to give an extended notice of my various experiments, I detail them only so far as preserving fence posts is concerned. In the spring of 1853 I had occasion to build a short piece of fence, which required forty posts. I could not procure such timber as I wished, and was compelled to use hemlock posts, 4×5 inches square, and surely could not have selected worse ones of any description. Many of my neighbors said they would rot off before cold weather set in. Thinking it a good opportunity to test the coal tar, I treated the posts in the following manner: Twenty posts were coated with it for a distance of three feet from the bottom, and into this a quantity of fine, dry sand was rubbed or sprinkled; the bottom of the post was thickly coated with tar and sand. Three days afterward the posts were brushed off with a broom, and another coat of tar and sand was applied, as before. They were left exposed to the sun for three days, and were then set thirty-two inches deep. Ten of the other posts were merely coated with coal tar, and no sand applied; five were charred in a fire and set without tar, and five were set without any preparation whatever.

On my return from the war in May last, I examined these posts, and found that the five that were set without any preparation had rotted entirely away, and had been replaced by others in the spring of 1862. Three of those that were charred were also replaced at the same time, the other two a year later. The ten that were coated with coal tar without the sand, had rotted, and were replaced in 1864. The twenty that were coated with tar and sand are still standing, as sound, I think, as when they were put there, and I would have no hesitation in guaranteeing them to stand for the next fifteen years. Above ground the posts were planed and well painted."

Mr. Greene accounts for these results by the fact that a thin coating of coal tar is not impermeable to air and moisture, while the thick coating of sand and tar is perfectly so. He adds:—"If I was to build a fence where the

posts were not to be painted, I should coat them all over with *tar and sand*, and I would not care much whether the posts were hemlock, oak, or chestnut, for I believe if the job were well done, they would last as long as any portion of the fence. It would cost but little, not two cents a post. The posts should be clear of bark, and clean, and then a man could prepare three hundred of them in a day by having a trough, not unlike, an ordinary hog trough about eight feet in length. He should put sufficient tar in this to cover a post; put in the post, and see that it gets thoroughly covered, then set it up to drain for a short time, in such a way that the tar from it will run back into the trough. He should have a quantity of very fine and dry sand at hand, and roll them in it when the tar has pretty well drained. After a few days I would have the posts swept off and that portion which is to enter the ground receive a second coat, taking care to coat the ends thoroughly, and if the tops were to be sawn off after being set, I would coat these again."

Plowing Ground without Dead Furrows.

Dead furrows are a nuisance, especially where hoed crops are cultivated; and when land is stocked down for meadows, deep dead furrows make an uneven surface for the mowers and horse rakes to work over. When a field is plowed in lands beginning on the outside, turning all the furrows outward, and finishing the plowing in the middle of the field, there will be a dead-furrow from every corner to the middle dead-furrow of each land, and a strip of ground eight or ten feet wide on one side of every dead furrow will be trodden down firmly by the teams when turning around. Plowing a field without dead furrows is simply commencing at the middle and turning the furrow slices all inward.

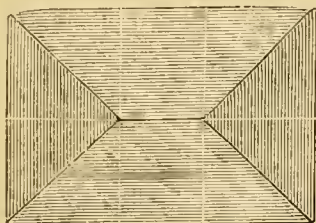


Fig. 1.

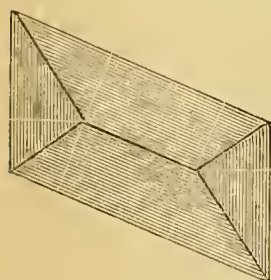


Fig. 2.

ward. If the plowing be done with a right-hand plow, the teams will "gee around," always turning on the unplowed ground. When a field is plowed in this manner, there are no ridges or dead furrows, and the surface is even, so that the operation of any machine is never hindered. When sod ground is plowed in lands, there is always a strip of ground beneath the first two furrow slices at every ridge, that is not broken up. This is to a great extent avoided when the whole field is plowed as one land, and may be entirely avoided, if back-furrowed.—The accompanying diagrams will show how to plow a square field, or one of irregular boundary, commencing in the middle and finishing at the outsides.

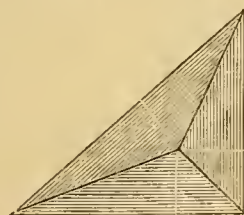


Fig. 3.

Figure 1, shows a rectangular field. The plowman finds a point equally distant from three sides, measuring of course at right angles to the sides, and sets a stake.

Then he finds the point equally distant from the three sides at the other end, and sets another stake. From these

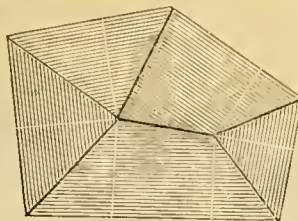


Fig. 4.

two stakes to the corners of the field he turns two furrow slices together, and then plows the field, being guided by them, and occasionally measuring to the outside to see if he is keeping his furrows of equal width at setting in and running out, and on each side. In fig. 2, a four-sided lot where the angles are not right angles, precisely the same rule is followed. In the case of the triangular field, the plowman begins by plowing about a single point, which, though awkward at first, may be executed with ease after a few trials. In the case of the irregular five-sided lot, represented by fig. 4, it is a little more difficult to start exactly right, but the ruling gives a clear idea of how the furrows run, and it is always well to pace off frequently to the outside of the lot—or rather from the fence, starting at right-angles to it—to be sure that the portion remaining unplowed on each side, and at each end of each side, remains always of a corresponding width, as the plowing progresses.

The Rinderpest.—State Action Needed.

The use of the German name for this cattle plague is becoming common, not because it means any more than *cattle plague*, but probably because there are other murrains and cattle diseases which have been considered cattle plagues in their day. We have already published (last vol. p. 267) the symptoms attending the disease, as given by high English authority, and have since noticed its rapid spread over England, and the distress it occasions. The timely and, it is to be hoped, efficient action of our government with regard to excluding all foreign cattle, is known to our readers, and we can do nothing now, except to keep diligent watch for the appearance of any contagious or epidemic disease among our neat stock or sheep, that its character may be ascertained as soon as possible. Doubtless the hides of slaughtered animals have been shipped from Europe to this country, though that is now perhaps stopped, and there are many ways in which it may be possible for the disease to reach here. In view of this, we deem it important that the State Legislatures should take immediate action, and pass laws requiring town or county officers to report at once to the Governor or other State officers the prevalence of anything like epidemic or endemic disease among cattle and sheep—cattle owners, keepers, or drovers being obliged under heavy penalties to report monthly the number of animals dying in their herds, together with the whole number of each herd. Such a record would be exceedingly useful, besides affording a great safeguard against the introduction and extensive spread of any such pest as this rinder-pest before we should be aware of it. Such a law as we suggest might be framed so as to be efficient and yet no great burden to any one, and it should be accompanied by legislation, empowering or requiring steps to be at once taken by town or county author-

ities to isolate diseased herds; railroad and other transportation companies, the keepers of market-yards, etc., in or near our great cities being brought under some such restraint, it might aid essentially in freeing our markets from diseased meats. An idea of the distress prevailing in England, may be gathered from the following extract from an article in the *Mark Lane Express* of London:

"The fatal rinderpest which threatened us in 1855 is now amongst us, and we see around us a verification of the picture Virgil drew of the effects produced by the same pest some 20 centuries ago. The cattle are dying around us by hundreds, at the rate of 7,000 a week. The outbreak commenced from June, and it was hoped that the cool weather of autumn would check, and that the frosts of winter would extinguish it; but throughout the autumn it has increased, the rains have laden the air with heavy vapor, which seems to have lent it facilities for transport, and we are now admonished to dread the winter for rinderpest, as we should hail it were we suffering under the scourge of cholera. Visitors can talk of scarcely anything else but how it started in London; how it spread with fatal rapidity, until now there is scarcely a county in England that can show a clean bill of health; how for a time it was confined to cow-stock, but in true keeping with its known character quickly struck down the store cattle in the field, or the fattening stock in the homestead. There is no escape: everything of the order *ruminata* goes down before it. The perplexed farmer is not allowed to place his trust in sheep—they, too, have proved themselves mortal. The cure, as yet, seems to fail us, and so endurance comes in as the only alternative. Some people want the Government to interfere with a strong arm, that can operate more effectively than by merely giving power to local authorities to carry out measures that may happen to be approved in any particular district over which they preside. Others are filled with the gravest apprehensions. The disease, they maintain, will run its course for years, as it did once before; and then it will stop, not because there are no more animals to die, but because there are no more cattle in a condition favorable for receiving and developing the germs of infection which reach them by one way or another. And everybody tells you to exert all possible vigilance in shielding cattle from contagion, and enforcing respect to the laws of hygiene in farm premises. All very wise and prudent, but almost impossible to be carried out properly, with open yards soaked by excessive rainfall, the beasts standing and lying upon manure like a sponge, and straw for daily fresh litter being scarce during foggy and drizzly weather for thrashing."

WORKING THE GROUND WHILE IT IS WET.—The temptation is often great, to use a fair month for the preparation of the soil for crops before the water is sufficiently dried off, or drained out of it, to warrant its being stirred at all. Thus the gain of forty-eight hours in time is often a serious detriment to the field for the entire season. Light sandy loams are not injured in this way, but every clayey loam is, and as a general rule, so is any soil which ever dries in lumps. The plow presses the furrow slices into clods, which often dry like pressed bricks, and the treading of the teams in harrowing makes bad worse, though the harrow tears them up somewhat. Even heavy loam may be worked into a light, porous, warm seed-bed if in proper condition for plowing before being worked.

The Groesbeck Prize Barn Plans.

We propose to publish in consecutive numbers of the *Agriculturist* the three plans to which the committee awarded the prizes offered by Mr. Groesbeck. This month we give the one taking the first prize of \$150, and can not do so without briefly expressing our own views concerning it. It must be borne in mind that cheapness was no part of Mr. G.'s conditions, but of course *economy* of every thing is essential in any good plan. With large expenditures of money in building, labor and care must be saved, the comfort and health of the animals, the security of fodder, and the protection of the manure provided for. Economy of labor is just as important as economy of money. The importance of, and comfort attending the ability quickly and easily to oversee one's establishment, to know that every man does his duty, that every animal is well cared for, that the manure is properly taken care of, that the various implements, etc., are all in place, can hardly be overestimated. It is almost equally important to be able to control the men, so that they shall find it easier to do just right than to neglect their duties. For this the barn should be planned; also that the men, each having his own responsibility, shall not interfere with one another. We hold also, that it is most important to centralize operations, so that the bulk of fodder, grain, roots, etc., cut up, ground, or chopped, may be easily concentrated upon the feeding floor, so as to be mixed, or cooked, and distributed to the stock, to be again collected as manure in one or two places, properly prepared for this purpose. The manure cellar under the barn, which is recommended, we object to utterly. The ground plan provides for no warm sheltered yards. These may indeed be made by erecting sheds and fences, but shelter which the barn should give against the prevailing winds, is from its shape chiefly lost; there is no chance for a good stock-yard, except one independent of the barn. The use of stanchions for cows may indeed be very well, if necessary, that is, if the quarters are contracted—as in old barns, or where cows are bought and kept for their milk alone, but for cows whose progeny is to be retained upon the farm, we hold that the animals' comfort is the owner's profit, and stanchions are undesirable. There is no provision for water, either in the barn or outside. Neither is there provision for manure, except the suggestion of a cellar. On the whole then, we must say that while we publish this plan as the *best* in the judgment

of a majority of the committee, it has our approval in but very few particulars. In many points, however, it is very commendable, well worthy of study and of comparison with the plans we expect to publish in subsequent numbers.

Design for a Barn.

BY MYRON H. BENTON, LEEDSVILLE, DUCHESS CO., N. Y.

The main building in this design is 46 x 66 feet, with 25-foot posts. The two wings are each 28 x 36 feet, with 15-foot posts. The roofs slope at an angle of 30 degrees, making the ridge one-

third the breadth of the building above the plates. The exterior is covered with vertical inch-boarding (planed and battened) as high as the eaves; but each gable is covered with clap-boarding, which projects 8 inches beyond the other boarding. A verge-board overhangs the

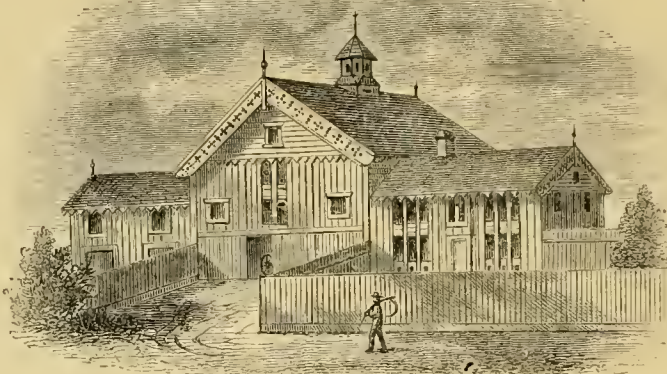


Fig. 1.—PERSPECTIVE ELEVATION OF BARN.

roof at the gable, and the rafters project into view at the eaves. The roof extends 20 inches from the sides. A ventilator is in the center of the main building, and projects square from the roof, but is finished in octagonal form. This needs only to connect with the open space of the interior, as the shoots for hay would serve as flues from the lower story. The arrangement of the yard is of course greatly modified by the situation and surroundings of the barn, and nothing definite could be specified without studying the site. The poultry-house is supposed to face the south; and the carriage-house and horse-stables should be the

in the bank—the other opening upon a level into the stables. The roof is double, the outside being plank, tongued, and grooved, which forms the bridge into the second story.

The stables are brought together into one portion of the building in such a way as to adapt the barn very well for a manure cellar. A slight natural hollow under this part would give every facility for making one. The entrance to the stables would be entirely upon one side, and the other would be graded so as to admit a team into the cellar. This would be an important attachment, as saving labor, promoting cleanliness, and preserving manure. There are 21 stanchions for cows, and 4 pens, mostly for young cattle. It is believed that stanchions, if rightly constructed, are easy for the animal, and have many advantages not given by other methods. It is very important that there should be no projection near the floor upon the face of the stanchion, as is often made,

to the constant torment of the cows when lying down. Even where there is no such obstruction there is scarcely room for her knees. If we observe a cow when lying down in the yard it will be readily seen that the line of a perpendicular stanchion will not give room for her doubled up knees without interfering with the natural position of her head. To remedy this, the hinge of the stanchion and the other uprights may be secured to the edge of a plank about 8 inches wide, which is placed horizontal (or somewhat sloping away from the cow), and is some 8 or 10 inches above the floor. This will give ample space for her knees, leaving her head in a natural position. No division is required between the cows except at their heads in the alternate spaces. I find by experience that it is better to have no manger divided from the feeding floor, but both on the same level with no obstruction between. The length of standing room for cows should vary from 4 feet 3 inches, to 5 feet 3 inches. A good way, in order to accommodate all sizes, is to have the edge of the floor next to the drain slant the whole length of the stable in a straight line from the shortest to the longest measure.

Even the stanchion does not secure cleanliness, especially with new milch cows under high feed of grain and roots, if the drain be made as it generally is. This is generally the case with dairies which supply milk to cities in winter. Even the limited motion which the stanchion allows a cow does not prevent her from stepping back and forth with her hind feet into the drain, if it be a shallow one. The secret, I find, in preventing this is, to have the drain quite deep—from 12 to 18 inches. It may perhaps be thought that this would be liable to trip the cows when going out and into their places; but this is not the case when they get accustomed to it. The walk should be of earth, and its level only half the height from the level of the drain to that of the stall flooring.

The pens for young cattle are boarded 5 feet high, with doors to the walk. There are also doors from the feeding floor into their mangers, into those of the horses, and also of the oxen.

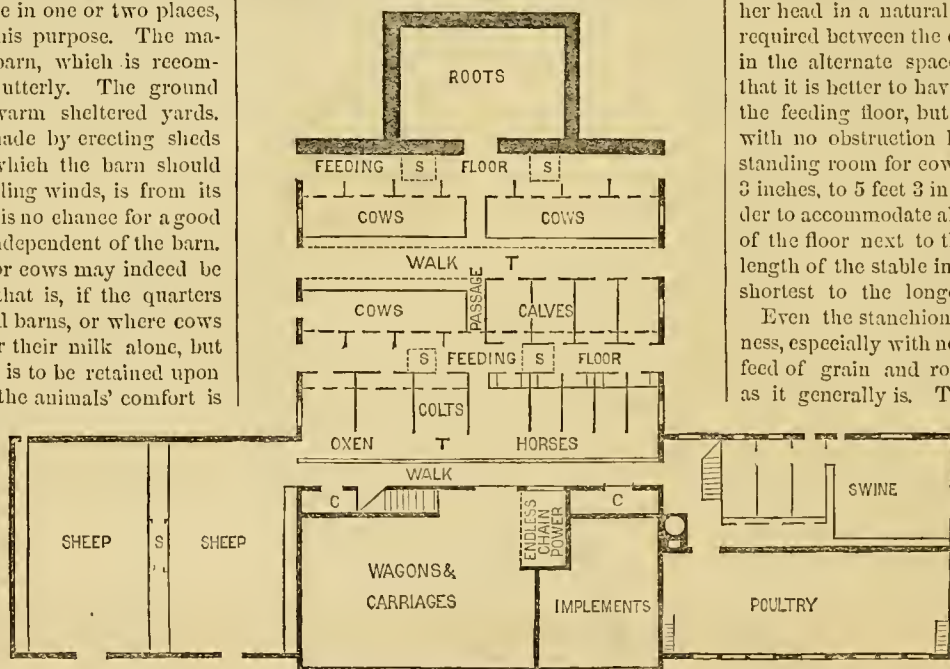


Fig. 2.—GROUND PLAN OF BARN.

most convenient of any to the farmer's dwelling. The main building would stand with one end against the bank, if a root-cellar is required. If one is not needed it would be better to have the barn stand clear of any side wall; but the entrance should always be as high as the second story. Even if the ground is level, the increased convenience well repays grading. The slope need not be more than 30 or 40 feet in length.

PLAN OF THE FIRST FLOOR.—The root-cellar is thirteen by twenty feet, with three sides

The space given to *sheep* is 28 × 36 feet, and is divided into two enclosures by a rack into which a shoot opens. Still further divisions may be made—and several yards could be enclosed convenient to them—if this should be desired.

A narrow passage crossing the walks and stables gives convenient access for the farmer to the different departments. There is a broad doorway from the wagon room into the horse-stable, admitting a team in harness. The walk shown in the plan is for the use of the attendant alone, and is raised 6 inches above the stable. Where the floors join, is a gutter for drainage of the liquid portion of the manure, which conducts, with pipes from both the other drains, to a cistern. *C, C,* are closets for harnesses, ox-yokes, &c. The main stairway also opens from this walk, and conducts to the roof of the barn. *T, T,* are trap-doors in the floor above; and *S, S, S, S, S,* are shoots for hay, etc.

The room for *wagons and carriages* admits six or eight vehicles. The room for *implements* is large enough for a mowing machine, horse-rake, etc., besides sundry smaller tools.

The *poultry room* upon the first floor is 14 × 35½ feet, and is connected with a small room, with a set-kettle for preparing their food, as well as that of the hogs, whose pens also adjoin.

The largest pen is 14 × 16, and there are three smaller ones. If more ample accommodations are required for swine, the accompanying plan for a *Detached Piggery* should be adopted.

A permanent endless-chain power is provided, to which the horses can be led directly from their stable. This occupies but little room, and a belt might connect it with a saw in the yard, for sawing up firewood. The pulley of the horse-power is also connected by a belt directly with the shaft of the thrashing machine above.

PLAN OF THE SECOND FLOOR.

The *machinery* connected with the horse-power is placed at one end of the main passage. The floor, *C,* is 7 feet above the second floor of the barn, and upon this stands the thrashing machine, *A.* The hay-cutter can also stand upon this floor, if it is desired to cut up large quantities of feed at once; or, it can be placed below, nearer the bays containing the most of the forage. The separator (which is removed when not in use) is over *B.* The arrangement gives considerable space for the grain as it is thrashed—as there would probably be little advantage found in a thrashing and cleaning machine combined. The latter, if separate, stands upon the main floor, and can also be connected with the power. Lay a flooring from the floor, *C,* as far as the stairway when needed.

The *poultry rooms* occupy the whole second story of one of the wings. There are small rooms fitted with nests, and the main room is provided with roosting poles at each end, with troughs beneath, and there are stairs to the lower room, for the use of the poultry. These rooms can be divided as well as the poultry yard, if different kinds and breeds are to be kept separate. The building is lighted and warmed from the windows, and could be further warmed by a stove if necessary. Beside nests and poles for roosting, there are few special fixtures required in a poultry-house. It should be as light and airy as possible, and yet warm. There should be no floor to the lower story, and the

fowls should be well supplied with gravel, ashes and water, besides plenty and variety of feed. All the rooms should be completely plastered, that they may be occasionally whitewashed, and whatever fixtures are put up for the fowls should

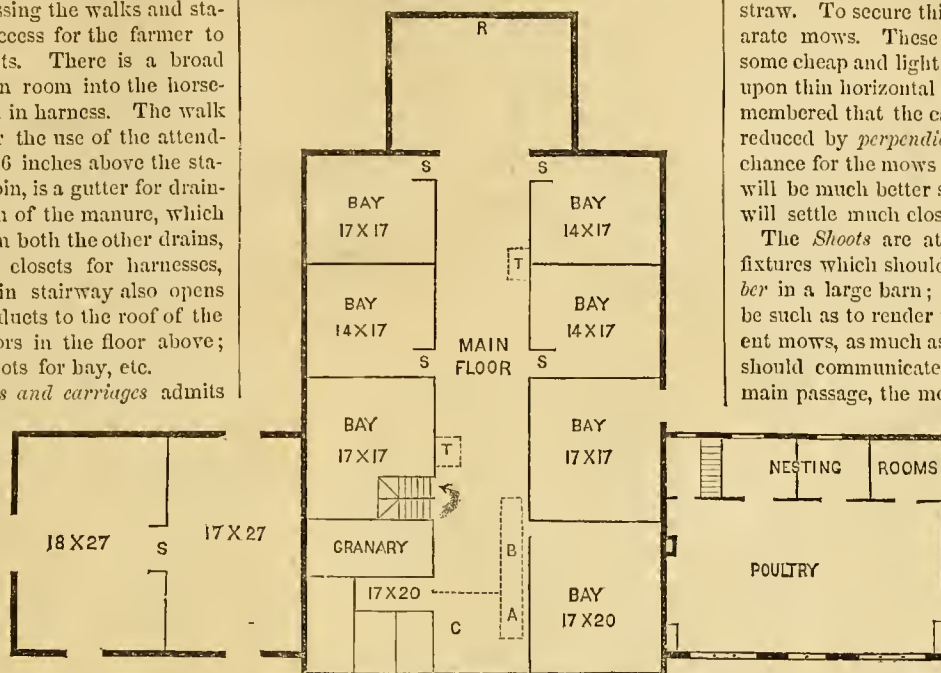


Fig. 3.—SECOND STORY OF BARN

be movable, that they may be readily cleaned. There is a large garret in this building which connects with the stairway. The flues for ventilating the poultry rooms can go through this to an opening in the gable.

It will be noticed that in this design the barn is divided into numerous small bays. In most

such an arrangement is very manifest, yet it is very seldom attended to. The whole barn will hold more than 125 tons of hay and grain. The trap-doors in the main floor are at *T, T;* and there is also a trap-door through the bridge at *R,* for filling the root-cellar.

The *Shoots* are at *S, S, S, S, S.* These are fixtures which should never be stinted in number in a large barn; and their position should be such as to render them available from different mows, as much as possible. And while they should communicate, if convenient, with the main passage, the mows should be independent

of the barn floor for their connection with the feeding floors of the first story. In this way the whole barn, including the central passage, can be filled nearly solid, and yet there be no difficulty in getting all the different sorts of forage to the stock below. The benefit of

DETACHED PIGGERY.

On many accounts, especially in fattening, accommodations separate from any other farm building would be preferred; for, with the utmost care in cleanliness, the hog seldom falls much short of being a nuisance. A plan for one is thus given to accompany this design. The building is 25 feet square, with various sized apartments, which are all convenient to a small room in the center, furnished with a set-kettle for cooking their food. The pens are made as airy as possible in warm weather—the enclosure being 4 feet high, and above that with shutters which can be opened the full width of the pen. The hinges are upon the upper edge, and they can be fastened up overhead. A garret gives room for storing food; and a manure cellar under the whole building to be well supplied with dry muck or some other absorbent, would be a good addition.

An old Farmer's Experience.

The following bits of experience are worth making a note of. There is only one point in which we disagree with our venerable friend. It is in regard to the degeneration of wheat, oats and potatoes. If we save the seed of small grains, in the ear or head, and especially if we give drill culture, extra care and perhaps hoeing to the grain we wish for seed, and select the heaviest kernels from the earliest and largest heads, small grains will not degenerate any more than corn. Our friend writes:

"I have farmed 46 years for myself and ever since 1831 have taken two agricultural papers. I have been greatly benefitted by their instruction, although there are many things published

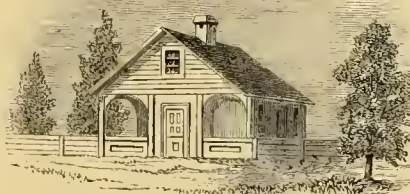


Fig. 4.—ELEVATION OF PIGGERY.

large barns the room for storing hay and grain is left in large spaces. When we consider the variety of forage which every farmer produces, and the manner in which he may wish to feed it out, it is easy to perceive that such an

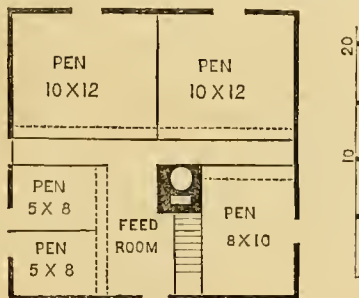


Fig. 5.—GROUND PLAN OF PIGGERY.

arrangement is extremely inconvenient. Large mows bring only a few kinds upon the top. Many of the sorts it is impossible to get at when they are wanted. The judicious farmer, however, wants every kind of forage in his barn available at all times—as well to give a constant variety of food to his stock, as to give particu-

in them that never ought to be. Allow me to give you a few facts.... Fruit trees should never be trimmed in February, March or April; the time is, when they are in blossom.The time to cut timber, to have it last, is in January and February, July and August.... One load of manure hauled out in the fall after the sun crosses the line, and spread, is worth two to four loads hauled out in the spring, any way that you can fix it.... Fall-plowing is beneficial on clay loam or muck soil, and on sandy and gravelly soil if you can plow before there is any frost.... Some men say that corn will degenerate and run out. My father got a kind of yellow 12-rowed corn in the year of the great eclipse 1806, which I remember very well. I took it from him in the spring of 1820 and have it now. It is an early, sound corn, very easy to husk. I can raise 80 bushels of shelled corn to the acre with no extra labor, planting 3½ feet each way. I have another kind of 8-rowed yellow corn, which I got in 1828, which will grow and ripen in 90 or 100 days.... Wheat, oats and potatoes will degenerate and wear out [with ordinary culture: Ed.]. We do not harvest our grain and cut our hay early enough in this country.... When I commenced farming I was closely watched by my neighbors, who said I plowed too deep, cut my hay too early, and cut my grain too green. I have farmed on 12 different farms, and the result has been, I have tripled the crops on an average. I have drained three farms pretty thoroughly within the last 20 years, and am now President of the County Agricultural Society."

Barn-Door Fastenings.

Several plans for barn-door fastenings are sent in by readers of the *Agriculturist*, who use them and prefer them to the perpendicular suspended bar, which was illustrated in the January number. Of these we select two which have real merit. Figure 1 is suggested by Wm. W. Fish, of Clinton Co. The fastening consists of two bars of wood (A and B), each a little more than half the length of the door. These are held in their

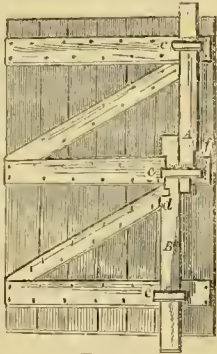


Fig. 1.

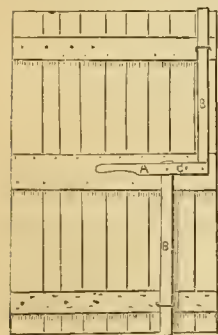


Fig. 2.

and lower cross-pieces of the door. They are attached by pins to a lever, A, which is fastened to the centre cross-piece by the bolt C. The

points of attachment of the bars upon the lever are equally distant from the fulcrum bolt (C), so that any motion of the lever will move each bar equally up or down. The opposite door may be fastened in the same way, or by a simple wooden bolt. These fastenings may be operated from the outside, if a pin be set in either of the bars to go through the door and move in a slot.

The Comparative Yield of Potatoes.

Doct. F. W. Hexamer, of Westchester Co., has given us the results of his last year's experiments with different kinds of potatoes. They were grown upon the same field, succeeding a crop of corn and without manure, with the following results.

Bushels per acre.	Bushels per acre
Cuzco.....360	White Mercer.....189
Garnet Chili.....290	Fluke.....160
Pink-eye Rusty Coat.....280	Prince Albert.....160
Peach Blow.....240	Early June.....150
White Peach Blow.....230	White Rock.....130
Prairie Seedling.....230	Early Dykeman.....120
Blue Mercer.....220	Early Cottage.....110
"Buckley's Seedling".....210	Early Sovereign.....80
Buckeye.....200	Rough and Ready.....56

Experiments were made with reference to the value of large or small seed; equal areas of land being planted with the largest potatoes, cut once lengthwise, and with small potatoes. In planting cut potatoes many insist on the necessity of placing the cut surface down, an operation requiring much care on the part of the planter. Doct. H. planted his cut pieces in both ways with the result of showing that it is a useless waste of time to place the cut side down.

Peach Blows, small seed, gave 160 bushels of marketable size and 40 bushels small, per acre. The same with large seed, 200 bushels large and 40 bushels small.

White Peach Blows, small seed, gave 170 bushels marketable, and 40 bushels small, while large seed cut in two, gave 190 bushels marketable and 40 bushels small, in those planted with the cut side up, and 35 bushels of small ones, where the cut side was put down. With those planted cut side up, or down, no difference was observed in the time the plants appeared, and the yield shows that the position in this respect is a matter of little importance.

Agricultural Education.—The Public School.

In our remarks upon this subject in our last issue (p. 55), we alluded to the fact that few school-books give any intimation that the knowledge imparted by them is the merest outline, the barest skeleton of the subjects on which they treat. It is surely not desirable to bewilder the child with the idea that knowledge is so vast and that the hill of science towers so high above him that he can never hope to clamber higher than its very base; yet it is important when he manifests especial interest in any one branch of knowledge, to be able to tell him where and how he may follow this bent, and perhaps even find himself investigating subjects upon which the wisest know but little. We consider this unfortunate impression, so often gained by school children, that if they know all that is in their books, it is enough, as one great reason why after leaving school so many give up all effort to acquire knowledge. The difference between teachers in respect to the desire to learn more, which they implant in their pupils, is very great. This is certainly the best thing a child or youth can be taught.

With the strong desire to learn he *will* learn. With the will, a way will be. If the best teacher the District will get is stupid, and cannot inspire the love of knowledge in the children, then the efforts of the parents to accomplish the same end must be stronger, and this part of education not be neglected, for with its neglect comes plodding mediocrity, or stupid listless life, or a life of drudgery and money-getting, the only aim being to add field to field, or dollar to dollar, and to receive the obeisance of those who bow to wealth. This object, however, is rarely accomplished, and usually for the mere lack of knowledge, that is, the reasoning ability, or clear-headedness, which comes of a love for knowledge.

The farmer's business is so varied, and touches so many branches of knowledge, that he may well stand aghast at the contemplation of them all. In common with the rest of the world, he is interested personally in all that affects the arts of comfortable living, the business relations of men, politics, religion, social life, etc. Besides, he has a great deal more to interest him and his children. He is in close contact with nature and her workings, and should know that thousands of the best minds in the world are studying the natural laws which have a bearing upon agriculture. Some study the relation of the soil to solvent influences, its ability to gain and retain fertility, its relations to moisture and drouth, to the action of the air, to manure, etc. Others devote themselves to gaining a knowledge of plants of all the different kinds, of vegetable physiology or plant structure, of the diseases of plants, of the changes which cultivation may affect. Others still, apply themselves to the study of animals in health and sickness, the principles of breeding, feeding, fattening, etc. Others study the weather and its relations to full harvests and scant ones, and to gain the ability to know beforehand and take advantage of whatever may come. And so in such different departments of the farmer's interests, wise men devote thought, zeal, and even life itself, to the fuller understanding of laws and facts which he may apply to his profit. Should he not know something about all this? Shall our boys grow up as ignorant of subjects which will enlarge their views and make them better men and better farmers, as the very oxen they fodder?

Let us see to it then that our farmer boys, with that thorough groundwork of good knowledge of the English language and of the cardinal rules of arithmetic and other general knowledge, gain also the knowledge that there is a great deal more to learn about things which will be very interesting and instructive, and which will add not only to their satisfaction of life, but to their wealth in this world's good.

Italianizing and Swarming.

BY BIDWELL BROS., MINNESOTA.

The method generally adopted by the best apiarians in both countries is, to compel the bees to replace the queen removed, from worker eggs or larvæ—Nature having provided that in case bees accidentally lose their queen, they can reproduce one from that source, and the queen so made, possesses force, soon after to acquire nearly the size and standard of anatural queen; so a worker of diminutive size, when emerging from an old comb, lined with even 100 cocoons, will gradually mature to an average sized bee. The requisites necessary to success, are best obtained in a prosperous colony, during the working season, viz: eggs or larvæ to convert into queens, honey and pollen from which

to make and fill queen cells, and young bees or wax workers to make those cells. Where these are most abundant, success is the more certain; a want of young bees causing the production of smaller and shorter queens; and larvae of unsuitable age, in case eggs are wanting, will furnish imperfect queens, if any.

In Italianizing stocks in common box or straw hives, we would recommend early in spring to feed the stock containing the Italian queen, by pouring one tablespoonful of honey into the hole in the top of the hive, morning and evening, to hasten the production of drones and brood, being careful to cover the hole to exclude other bees. When the drones have appeared, blow a little smoke into the entrance, invert the hive (hive A), placing over it an empty one (hive B), then drum on the lower hive (A) 15 minutes, or until the queen and bees have gone up, (this can be ascertained by first making a large hole or several small ones in the top of the empty hive (B), which should be covered with wire cloth, or glass to observe when the bees ascend), then remove the hive with bees, placing it temporarily on the stand of the parent hive (A). Remove the drummed hive (A) to the stand of the stock (C) you wish to Italianize, removing it (C), and also driving out its bees and queen, which shake out on a cloth in front of the first drummed hive (A), that you have previously placed on their stand. As the bees go in, catch and kill the black queen. They will then raise an Italian queen from the Italian brood in the hive. Place the hive (C) containing black brood on the old stand of the Italian bees (A), shaking them in front. After ten days, drive out the Italian bees (that is the stock A in the hive of C) with their queen, again exchanging this stock with another until all are Italianized. On the first three pleasant days after the 12th, counting from the time the Italian queen is removed, contract the entrances to the hives containing black drones. Should any queen meet black drones, which can be known by their imperfect worker progeny, they should be again treated as black ones.

Another method, when frame hives are used, is, early in the spring to remove all the frames containing drone comb from the black stocks, replacing worker combs, and giving the stock containing the Italian queen one or more frames of worker comb. When the drones mature, remove the honey board that covers the frames, and place over an empty hive or cap, and drum up the bees and queen, exchange as in the case of the box hives, repeating it every ten days if necessary. If the stocks are numerous, ten days after the queen has been removed from any hive, the new queen cells will all have been sealed. Then carry the hive to a room and divide the combs, putting one, two, or three frames with the adhering bees into empty hives, and at one side, being careful to give each at least one comb of maturing brood, and one of the largest and longest sealed queen cells. If the sealed queens happen to be all on one comb, a piece of comb an inch or two in size, containing a queen cell, can be cut out, and inserted into a similar hole cut in another comb, being careful not to chill or injure the queen larvae. Place the hives containing the combs, one on the old stand, and each of the others on the stands of stocks containing black queens, removing them away. When the workers fly out, they return to their former stand and enter these hives, and if the season is not far advanced, all will increase to good colonies. If practised early, this will answer for swarming; if late, the stocks may afterward be strengthened from stronger stocks.

We have adopted the following plan, which we consider the most perfect system of swarming, using frame hives: Early in the spring, when the stocks become populous, we lift out the two outside combs, placing them near the centre of a similar but open bottomed hive, then crowd the combs in the old hive to the outside, replacing empty ones near the centre. Then we place over this the open bottomed hive, filling up with empty frames. In this way the majority of the stocks can be employed filling hives for the new swarm, while a few can be raising queens in the natural way. Such should not have additional room, but should be examined every ten days, and when sealed queens are found, they may be removed, on the frames, to the upper hives, which should then be shifted with the adhering bees and combs to the stand, the lower hive being removed, but that only a foot or two away. Little time is thus lost to either the old or new colony. A few of the best queens are selected for queen raising; their hives should also contain drone combs, the others, none. In this way all the better qualities of the Italians can be preserved, and perfect purity be easily and safely maintained.

Effect of Shelter on the Health of Stock.

The comfort of stock is greatly promoted by good shelter. How different do the sleek and contented cattle and sheep in a well protected barn-yard look, from the poor, rough-haired, pinched-up stock in an open field! On entering such a yard, the first thought is: How comfortable the creatures look! Now, "the looks of things" should not be disregarded.—Then think of the economy. It may cost something to put up sheds and high, tight fences; but in the long run, it costs more to feed half-starved cattle. Before any animals can fatten, a certain amount of food must be expended in keeping them comfortably warm. If healthy neat stock and sheep have as much good food as they can eat, they will perhaps go through the winter in about as good health as they would if well housed or with the best shed room, even though they be exposed to all the rigors of the climate, but the amount of fodder they will consume is immense, and if they are not quite well to start with, or get short of fodder, it will go hard with them. Cows will sink their calves, sheep will die, the lambs will be born dead, and other evils almost surely follow. Close stalls or rooms for cattle and sheep cause disease of the lungs, indigestion, colds, fevers, cutaneous disease, etc., the tendency to these disorders being increased by lack of cleanliness, by improper food, etc. Fresh air, not necessarily cold, but much better cold than not fresh, is a prime necessity. For breeding sheep or any but those rapidly fattening, the exposure of half open sheds is not objectionable, but for all kinds of neat stock and horses it is better if possible to provide warm quarters. Health of stock and profit in feeding are so closely connected with good air, warmth, cleanliness, good food etc., that they all ought always to be aimed at.

Too Much Land.

The desire to own a very large farm is natural, but often proves unwise in its results. When a man wishes to practise a mixed husbandry, and his present acres are too few and unsuitable, it is doubtless wise to annex more territory. Neighbor Jones has twenty acres of meadow land, which is suitable only for hay, or grain, or

hoed crops. But as he finds a small dairy would be profitable, and sheep would bring in good returns, it would be advisable for him to buy several acres of rolling or hilly land adjoining. But this accomplished, let him stop, and be careful to buy no more than he actually needs for his special purpose. For, this new land will have to pay taxes, will have to be fenced, and may need other expenses laid out upon it. At any rate, it will add to his cares, and perhaps will bring in no adequate return.

We know a farmer who, ten years ago, owned 150 acres, and was doing very well; he now owns five hundred, and is worse off than before. And why? Because this large farm is a great bill of expense to him; he cannot afford to keep it up in good condition, and it hangs a millstone of care about his neck. His wife and children, both sons and daughters, are obliged to work hard to keep the great machine a-running. We presume his boys declare they will leave home as soon as they are old enough; and the girls say they will die before they will marry farmers. Neither sons nor daughters are educated as they deserve to be; they cannot be spared for this from work on the big farm.

Now we declare that such a farm is a curse to its possessor and his family, and an injury to the whole agricultural interest. If that man wants to save himself and his household, he should sell at least one half of his land, improve the remainder to make it more productive, release his children from bondage, and try to make his home a place of comfort. He will live longer, lay up as good a property, and will train up a more intelligent and a happier family.

The Camels on the Pacific Coast.

It must be well known to most of our readers that these strange and wonderful animals, natives of the East, and with which we associate only Oriental ideas and scenes,—the Arab's Ship of the Desert—the Tartar's wealth in peace, and strength in war,—the Turk's drudge and the Persian's glory—in two distinct species are domesticated upon our great Western plains and deserts. Having seen in the possession of Prof. W. H. Brewer, of Yale College, a striking sketch of a group of Bactrian camels on the Humboldt desert, Nevada, latitude 40°, we obtained permission to copy it, and he has favored us with some notes of his observations of the camels on the Pacific coast, where he has lately been.

Camels were introduced into the United States at several times, both under government auspices and by private enterprise, but the most considerable importations were made by or under Jeff. Davis, while U. S. Secretary of War. Both, the large Arabian one-humped camels or Dromedaries, and the smaller two-humped Bactrian camels, were imported, the former we believe from northern Africa, and the others from western Asia. One of the native keepers that came over with the latter, was "Yuseph Badra," made somewhat famous by J. Ross Brown, who had already seen him in his "Crusade in the East." Nearly or quite all of the camels were put first on the *Southern deserts*, that is on "the plains" of Texas, New Mexico, Arizona and California, and none were used north of the northern line of Arizona until after 1859 or 60. Although high hopes were entertained of their usefulness there, the sequel has thrown much doubt over their availability for our uses.

Of the wonderful power of endurance, the strength and fleetness of the camel, it is un-



CAMELS UPON THE AMERICAN DESERT. — Engraved for the American Agriculturist.

necessary here to speak. On the southern deserts they at first bade fair to succeed. They crossed with ease those desolate stretches that were very trying to horses and mules, but while they could go longer without water, the "alkaline water" of the American desert seemed as fatal to them as to other animals. They obtain from the stunted shrubs, where there is little or no grass, a larger proportion of their food than horses or mules; and it is stated that they will even eat sparingly the stinking "Creosote bush" (*Larrea Mexicana*) of the Colorado and Arizonian deserts, a plant no other animal will touch.

Various causes induced the sale of government camels, and we believe none are now owned by the government, but that all were sold in California, and are now scattered over that state and Nevada. We have heard of no camels in Texas since the beginning of the recent war.

They were a losing speculation to government, selling at only one-fifth of their original cost, or even less, for it is currently stated that camels which cost the United States \$1,800 each, sold at an average of about \$150. Some of the Bactrians that were imported privately, proved a better speculation, we believe.

The dromedaries are the largest, and some were fine animals compared with the miserable caricatures we see in menageries. The strength of one of them which was detailed for use by the United States California Boundary Commission, in 1860, while at Los Angeles in Southern California, was tested by some of the reckless employees. He was packed with a load of 2,300 pounds, while kneeling; he rose and walked about the corral with that enormous load and did not appear to be injured. He was killed a few nights later by one of his mates that got loose and attacked him with his ponderous

feet (their weapons of offence). The heavy blows could be heard nearly a mile, while the drivers dared not interfere. The skeleton of this animal was sent to the Smithsonian Institute, where we suppose it is now to be seen.

It is a curious fact that horses and mules are very much afraid of these animals, until they become accustomed to their appearance and odor. A grizzly bear does not inspire so great terror, as does a camel. Sometimes the horses seem perfectly frantic even before they can see the animals, simply from smelling them.

The newspapers stated that at one time, about 1859, the town of Brownsville in Texas passed an ordinance declaring camels a nuisance, and prohibiting their being driven through the streets, owing to their effect on the horses; and California newspapers contain many accounts of runaway horses in the various towns where camels are seen, incited by this same cause. Nevertheless, when horses and mules become accustomed to them, they appear very much attached to their homely comrades.

A few camels are now scattered over California, but most of them are in Nevada, where they are used mainly in packing salt from the deserts for use in the processes of silver extraction; the usual load is about 600 to 800 pounds. We have no means of knowing the actual number of camels now alive in this country, but as before stated, their numbers are decreasing, although some have been born here.

There are several causes which combine to render the success of camels in the United States more than doubtful. Our deserts are unlike those of Asia and Africa, they are more covered with shrubs, and often the surface is strewn with sharp, cutting fragments of volcanic rocks. We have much greater daily ex-

periences of heat and cold, and at times heavy rains and snows. At these times, the feet and backs of the camels are apt to get very sore. An Arab can wait; he is never in a hurry; if he can find feed, a few weeks more or less is not of much matter. Not so with the American, he is in a hurry, he can not wait, even to save his camel. Furthermore, in Asia camels are abundant, so that if one gets sore and the caravan is in haste, the animal is sold or traded for a sound one. A few weeks' rest will recruit him, and he is ready for a new journey. But here he is used as long as he can go, then thrown aside for new animals. They seem ill adapted to the habits of Americans, especially that class who have long used mules for packing on our western plains.

"The last camels I saw," says Prof. Brewer, "were near Virginia City, Nevada. Their backs had not been cared for, and they had been used in packing heavy loads of salt from the deserts. Salt water and alkali had accumulated in the long hair of their humps, their pack-saddles had galled them, and great loathsome sores nearly covered the parts touched by the saddle. A pitiless snow squall was sweeping just then over this inhospitable region, and those miserable beasts having fallen into bad hands, and in a bad climate, looked sadly enough. Late California papers relate that soon after opening the last addition to the Pacific Rail Road in that State, the locomotive demolished a camel that had strayed upon the track. Who he belonged to, or how he came there remained unknown. The merciless steam-car knocked him aside to give place to a more truly American favorite. We have more hopes in the success of the Pacific Rail Road, than in camels, be they one-humped or two-humped."

The Japanese Striped Corn.

Every one knows the old striped or ribbon grass of the gardens, in which the leaves are marked with white stripes, and like the marks on the showman's zebra, are "nary one of them alike." This new corn is much like the ribbon grass, magnified; its leaves present the same contrasts of color, and quite as great a variety in their markings. Very rarely an occasional plant with variegated leaves will appear in a field of common corn, but we never knew one of these sports to be perpetuated. The Japanese, who have a great fancy for horticultural stripes and speckles, have succeeded in establishing the peculiarity so that it is perpetuated with great certainty by the seed. Our friend Thomas Hogg sent home the seed of this novelty to his brother, who planted about $\frac{1}{4}$ of an acre with it. We saw the piece when the plants were about a foot high, and failed to find any in which the leaves were not marked. At that age, the leaves were striped with rose color as well as white, but we learn that this disappears as the plants get older. From its habit of growth Mr. Hogg thinks that it belongs to a species of *Zea*, different from our ordinary Indian corn (*Zea Mays*). We judge that it will prove very effective when placed in ornamental groups.

Dr. H. Schroeder's New System of Treating the Grape Rot.

To the Editor of the American Agriculturist:

Much is said and written in regard to that most dreadful disease, the Grape Rot. Under-draining, ditching, subsoiling from 18 to 36 inches deep, long and short trimming, sulphur, lime, and sulphate and phosphate of lime—indeed almost everything is tried to prevent or to cure the Grape Rot; but all have failed. New varieties, it was hoped, would not be liable to the rot, but these also have failed in most cases. The vine that has rotted the most, is the celebrated Catawba. Wherever the Catawba will ripen, and is perfectly free from disease, it is a splendid grape—spicy, showy, aromatic and vinous, and makes a superior wine, a wine that speaks to our heart. Pity, that the Catawba, in consequence of the awful rot, became so much discarded; but I do not blame its opponents amongst vineyardists, as they have suffered so much under its culture. Years ago I noticed that the first crop on Catawba vines was not injured by the rot, observing this to be the case in other peoples' vineyards, as well as in my own. I shall never forget the sight of my first Catawba crops. When the fruit on my neighbors' vines was rotting, mine stood there in perfect health and glory. This I noticed on all my first-fruited Catawbas, as my vineyards were planted in successive years. I further noticed, that the fruit on my old-wood layers, which I used to make every year, were free from rot. I then laid down several old-wood layers, and cut them off from the mother vine in the fall, and found last year that the fruit on these new vines was perfectly healthy, while the fruit on older vines rotted entirely.

This last year was the hardest year for Catawba vineyardists, and the loss can be counted at very near two millions of dollars, in the West alone. I want to say, to prove the truth of my system, that the Catawba vineyards bearing for first time here, (Mr. G. Lange's and Mr. Schonebeck's) were a perfect exhibition of



NEW JAPANESE CORN.

grapes, when older vines close by rotted entirely. Years ago it was said Nauvoo, Warsaw, and Alton, in our State, had a peculiar soil to perfect the Catawba. But I always denied it in our public horticultural gatherings, and it has been found that the Catawba will rot as badly there as in Cincinnati and Herman, or elsewhere. The islands in Lake Erie, it was said, were entirely free from rot, but the demon went there too, and will be worse next year when the vines will have become older. All the facts above referred to, finally led me to a new system of grape culture, which I claim as my own discovery.

REMEDY.—After preparing the land for the vineyard, plant with good strong layers or first-

rate cuttings, set from 8 to 12 feet apart in a square, in the usual manner. When the vines come to bear the first full crop, say the third or fourth year after planting, take one strong cane of the bearing vine, raised for this purpose; and close to the root of the vine open a little ditch in the row with the hoe or spade, from

4 to 6 inches deep, between your two bearing vines to a point midway between the two. Lay down the cane in this, the end sticking out of the ground, and after covering the ditch, cut the cane off at one foot above the ground. This I will call the *first reverse*. Let grow from this, three strong unchecked vines; two of these are for fruiting the next year, and can be cut long, to give a good crop of fruit. The third cane is for the *second reverse*. In the spring cut your first reverse loose from the mother vine and let the mother vine bear a good crop, or *two* if you choose, as the case may be; then chop it away to give room for the second reverse or third reverse. Take the third cane of the first reverse, lay it across the row to the centre of the space as before described, 4 to 6 inches deep, and one foot above the ground cut it off. Now you have instead of one, two rows of vines. Let again three canes grow on the second reverse (two for fruiting and one for the third reverse). The *third reverse* is made by layering the cane of the second reverse in the new row up to the center of the interval in that row; treat it in the same way as the other reverses. Take the *fourth reverse* made by taking a cane (in the second year after fruiting), from the first reverse, and after chopping out the original vine, lay it to take the mother's place. One-third (or one-fourth as the case may be) of the vines are removed every year, by chopping out and thus making room for another reverse, and so on. There will be in this way, by very little labor and without any doctoring, always a new and vigorous vineyard free from disease and paying well for labor, in superior fruit and superior wine. It may be that in some slower growers than Catawbas or Concords, the reverses can be made only every two years; but good healthy vines in good soil and locality, will stand the reverses almost every year.

This is mainly recommended for Catawba, and other varieties of great value but inclined to rot. Whenever a variety proves free from disease, grow it as long as you please *profitably* without reverses. But one thing is sure, the *finest fruit grows with me on young vines*.

I hope that every one who grows a Catawba vine, or any other vine inclined to rot, will give my new system a fair trial and report publicly the result. Any thing not plainly understood, I will explain on application with the greatest pleasure. My object is only to save good varieties of fruit (inclined to disease) for the benefit of my fellow-men, and to help the often discouraged, poor, hard-working man; and if this my new discovery shall do them good, it will make happy your friend DR. H. SCHROEDER.

Bloomington, Illinois, Dec., 1865.

We are happy to place the Doctor's views and practice before the country, and commend them to the attention of grape growers.—ED.

Notes on Grapes and Grape Culture.

Pots vs. Broad Borders.—Last August we set forth, as fairly as we could, the advantages which the advocates of border culture claim for their

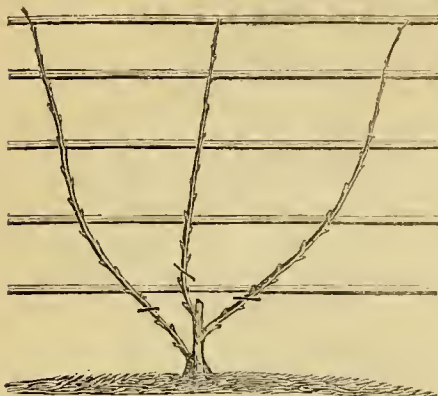


Fig. 1.

method of growing young vines, and in January last, "A Nurseryman" presented the case for the advocates of pot culture. These two articles have called forth several others, which, as they are only re-assertions of former statements, we are obliged to decline publishing. What is wanted now, is the results of actual experience with both kinds of vines in the vineyard, in the same soil, and under the same treatment.

A Neat Garden Trellis.—A correspondent, "N. C. C.," at Dracut, Mass., makes a very neat and durable trellis by the use of old steam or gas pipe, 1½ inch in diameter. He buys second-hand pipe at a cheap rate, and inserts pieces of proper length in large stones bedded for the purpose. A hole of the proper size is drilled in the stone, and the pipe cemented in by means of melted brimstone. Holes about a foot apart are drilled in the pipe to receive telegraph wire which runs from post to post. Mr. C. wishes to know if such a trellis would be safe near the house, as some of his neighbors tell him that there is danger from lightning on account of it. We should say it is perfectly safe, and not half so dangerous as the partly insulated tin roofs which probably some of them have on their houses.

Training upon Arbors.—While the practice of growing vines upon arbors is not to be commended as the best, yet there are many instances where the foliage is desirable as a screen, and it is often wished to cover the naked side of a building with a vine. When vines are grown in such places, they generally produce but a moderate quantity of inferior fruit, and if neglected, soon become a matted mass of weak shoots.

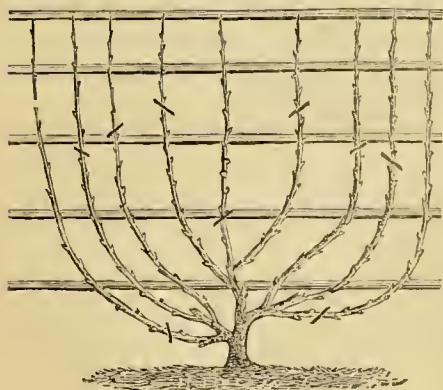


Fig. 2.

By beginning right, and judiciously pruning each year, the vine may be made both to serve

as a screen and give a fair amount of fruit. To effect this, Mr. Husmann, the distinguished vineyardist of Hermann, Mo., gives a very good plan: The first step is to get a strong vine: plant it in rich soil, and grow but a single cane the first year. This is in autumn cut back to three buds, each of which will throw out a strong shoot the second spring, and in the following autumn will present the appearance of fig. 1. These three canes are to be pruned, leaving three buds upon each, as indicated by the cross-lines. The third year, 9 strong canes will grow, and at the close of that year the vine will be in the condition represented in fig. 2. There are now three principal divisions or branches, each of which bears three canes. The pruning at the close of the third year is done at the points indicated by the cross-lines. One of each of these three canes is cut back to two eyes; the other two are shortened, according to their strength, and tied up. The fourth summer the buds from the canes which were severely shortened, will produce strong shoots to continue the spreading of the vine, while the buds upon the long canes will produce numerous side branches, which, during the summer, must be kept tied in and evenly spread over the trellis. At the end of the fourth year, the appearance will be



Fig. 3.

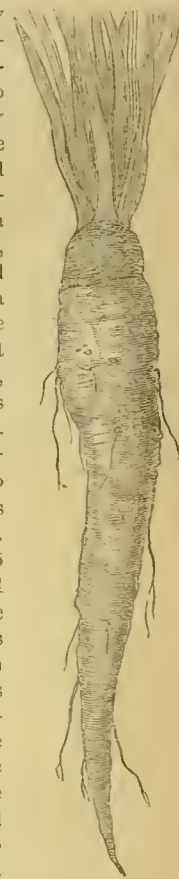
like that of fig. 3, which, to save space, shows only half of the vine. In pruning at this time, the growth of the season is cut back to one, two, or five eyes, the weakest branches being cut back the most. By the use of judgment in pruning and supplying the vine with plenty of nourishment, a large space may be kept covered with new and healthy wood, which will give a dense sheet of foliage, and at the same time a supply of fruit, though of a quality inferior to that from vines grown expressly for fruit.

The Rot.—The disease which is known as the grape rot, has proved thus far more untractable than the mildew. Some have ascribed it to an unhealthy condition of the root of the vine. This would seem to be Doct. Schroeder's view of the matter, and he proposes, in a communication which we print elsewhere, a constant renewal of the root by layering. Doct. S. is a great enthusiast in grape-culture, and being an extensive cultivator, every thing that he writes will be sure to command general attention.

The Fruitgrowers' Society of Western New York took a vote upon the best varieties of hardy grapes. Thirty-one persons voted, and those grapes which had over ten votes were, in the order of the number of votes they received, as follows: Delaware, Diana, Isabella, Hartford Prolific, Concord, Creveling.

Do You Have Salsify?

"How many of the readers of the *Agriculturist* know Salsify by sight, and how many, or rather how few of them have it in their gardens?"—"I wonder if potatoes and turnips were as long in making themselves popular as are Salsify, Cauliflower, Savoy and other good things."—"Why don't you tell people what a nice vegetable it is?" was a part of the talk over some delicious salsify soup. We have had something to say about this vegetable, and now figure it, so that our readers may know what it is like. It is one of the few articles of food furnished by the great family of Compositae. It is a biennial, with narrow leaves, and produces the second year a solitary flower on a stem 2 or 3 feet high. The flower is shaped somewhat like that of the Dandelion, but is purplish. The seeds are nearly an inch long, ribbed, and are not to be relied upon after they are two years old. The treatment is the same as for Parsnips. Sow in May, in drills 15 inches apart, and thin to 4 or 5 inches in the row. The usual size of the roots is about a foot long and an inch in diameter, but larger ones may be had in a rich mellow soil. The roots may be used whenever they are large enough. Sufficient for use during the time the ground is frozen, may be taken up and buried in the cellar; it will keep in the ground in



SALSIFY.

the same manner as a parsnip, and is fit for use in spring until the flower-stalk commences to push. This plant unfortunately has received the name of oyster plant, or vegetable oyster, which doubtless prejudices many against its use. As singular as it may seem to those living near the sea, there are many persons away from the points where oysters are common, who look upon them with aversion. It is not necessary to compare salsify with anything else, for to our notion it is good enough in itself, and probably any one fond of parsnips, and many who are not, would esteem this as a valuable addition to their variety of vegetables.

The Hepatica or Liver-leaf.

The disappearance of the snow is the signal for the true lover of nature to commence his rambles in the woods. He does not wait for the trees to be in leaf, for he knows that there will be an abundance to interest those who have appreciative eyes—even though to the dull observer the woods still appear wintry.

The twigs of the Red-Maple are ruddy with their bursting buds; the Ash begins to show its flowers, so inelegant, yet welcome because they are flowers; the golden buds of the fragrant Spice-bush are cautiously opening, and at our feet the pale blue flower of the Hepatica gives assurance that spring has come. The violet may serve in Europe as the emblem of spring, but with us, the Liver-leaf, albeit its name is unpoetical, must stand as the herald of the season. Rising from the cluster of last year's leaves, come the hairy stems, each bearing a single flower, which has no petals, but to compensate for their absence, the calyx is delicate in texture and color, and to those who do not look at plants with a botanical eye, is to all appearance a corolla. Just below the flower are three small leaves forming an involucre which appears much like a calyx. The leaves are produced later than the flowers, and grow quite thick, and they remain during winter until after the new ones are formed. In the dark ages it was believed that plants, by the form and markings of their leaves and other parts, furnished an index to their medicinal qualities. Accordingly, the three-lobed leaf of this plant being supposed to bear a resemblance to the shape of the human liver, it was considered that nature intended it should be employed as a remedy in liver complaints, and for a time it had a medicinal reputation. Though quite as absurd things are believed now, we have got over the "doctrine of signatures," as it was called, and though our pretty little plant has lost credit as a medicine, it bears evidence of its former reputation in its generic name, *Hepatica*, which is derived from the Latin for the liver—and in its common name of Liver-leaf. The plant is also sometimes called Liverwort, a name, however, which properly belongs to some humble plants related to the mosses.

We find some plants with the lobes of the leaves pointed, like those in the engraving, but more commonly the lobes are rounded and blunt. Some consider these as distinct species, while others regard them only as varieties. The ordinary form with rounded lobes is *Hepatica triloba*, and the sharp-lobed one is called *Hepatica acutiloba*, by those who regard it a distinct species. We have found specimens with the leaves split up into several narrow divisions. In the wild state the flowers vary in color, giving us purple, blue, pink, and even white. In cultivation there are double flowers of all these shades, except white, which has not yet we believe been produced in the double form. This wildling of the woods does very well in the garden: it should have a light soil with plenty of vegetable mold, and a partial shade. The double varieties are much grown by florists. They may be planted in the open border, or if early flowers are wanted, they are set in cold frames. Planted in pots and kept in a cold frame until early spring and then brought into the green-house, the double varieties flower profusely, and are very ornamental. It is a common spring flower in the London markets, but is not much known with us, except by the florists, who use a considerable quantity of them in making up bouquets. The plants are multiplied by dividing the roots.

Select Pears for General Culture.

The list of fruits recommended for general culture by the committee on the Greeley prizes,



LIVER-LEAF—(*Hepatica acutiloba*.)

was published in January. This committee comprised some of our most distinguished pomologists, from different parts of the country, and their object was to present a selection of fruits which are adapted to the widest possible

From the inquiries we have had, it would seem that some of the pears in the list are but little known to our readers; especially the summer varieties, Rostiezer and Manning's Elizabeth.

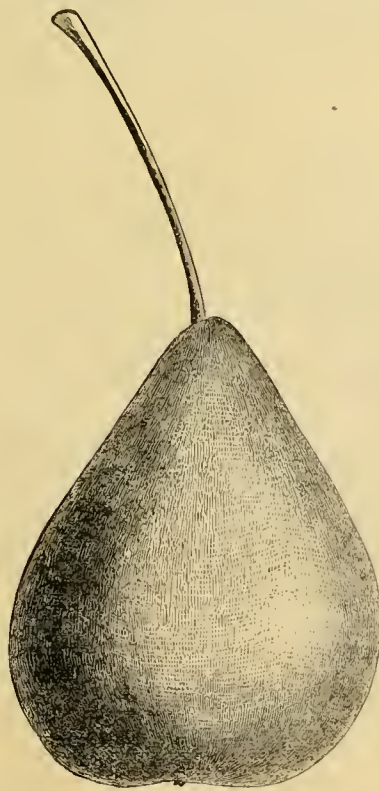
The early pears commonly cultivated are usually of indifferent quality; if it were generally known that there were really good sorts that ripened in August, they would be much sought after. This decision of the committee has called general attention to the above named sorts, and we comply with several requests in giving illustrations and descriptions of them, as we have room. In the present issue we can only find space for the

ROSTIEZER.—The precise origin of this variety is unknown. It was first introduced to the notice of American pomologists by the late Mr. Manning, who obtained it under its present name from a nursery in France. The tree is healthy, and when young produces vigorous upright shoots, which in the old tree are somewhat drooping, and if the tree is not shaped by severe shortening while young, it will assume an irregular spreading form when left to itself. It grows well on both pear and quince stocks. The engraving represents the fruit of natural size and shape. It is rather below the medium size, of a regular

pyramidal form. The stem is remarkably long and slender; calyx open, in a shallow basin. The skin is slightly rough, of a dull green, often somewhat russety, with a dull red tinge on the sunny side. It is a very juicy, melting, sweet pear, with an excellent flavor; a great bearer, producing its fruit in clusters. Hovey says of it: "As a summer or early autumn pear, it is scarcely equaled in its spicy and luscious flavor, partaking much of the character of the Seckel. Like the latter variety, it is a small and somewhat indifferent looking fruit, but, from its other fine qualities, holding the highest rank among the choicest pears." The other pears recommended were, (in addition to the Bartlett, which took the premium as the single pear, best suited for general cultivation,) the Seckel, Sheldon, Lawrence, and Dana's Hovey. These are all good and reliable varieties, but there are others which, in a collection of moderate size, we would not willingly omit, such for example as: Buffum, Howell, Duchesse d'Angouleme, Beurre Bosc, Tyson, Beurre d'Anjou, etc.

The Process of Fertilization.

It has long been established that a grain of pollen, when it falls upon the stigma of the pistil, pushes out a prolongation or pollen tube, which continues to extend through the substance of the pistil until it comes in contact with the ovule, which after this contact begins to develop an embryo and becomes a seed. That so minute a body as a grain of pollen should be able to throw out so long a tube—sometimes several inches in length—has been a mystery which could only be solved by supposing that the pollen grain received nourishment from the pistil, and that the prolongation of the tube was an actual growth. That such is the case, and that growth really does take place, has been shown by the researches of Dr. P. Martin Duncan, quoted by the London Gardener's Chronicle.



ROSTIEZER PEAR.

range of climate. It is quite difficult to fix upon any one or any dozen varieties which will be suited to every situation, and we believe that the selection of the committee will give as general satisfaction as any that could be made.



CLEMATIS LANUGINOSA.

Dr. D. has shown that the pollen tube is not a continuous tube, but consist of a series of cells formed successively, growing through the tissues of the pistil,—in the Tiger Flower, at the rate of one inch in six hours—and this even when the upper end of the tube is destroyed. He also observes that the pollen tube does not penetrate the embryo sac, but that nevertheless the contents of the tube enter to the embryo sac, after which the embryo commences to form.

The Finer Sorts of Clematis.

The climbing species of Clematis are general favorites, and some of them, such as *Clematis Flammula*, *Viticella*, etc., have been known in the gardens these hundred years, and our native late flowering *C. Virginiana*—always admired in its wild state, both in flower and fruit—should be seen much oftener in cultivation than it is. This wild species, known as Virgin's Bower, and Traveller's Joy, is found in rather moist places and may be transferred to the garden. But these old varieties are quite eclipsed by their newer relatives from China and Japan,

which have come to us within a few years. Still they are not as common or as well known as they should be. *Clematis patens*, from Japan, and *C. lanuginosa*, from China, have given origin to some varieties, the flowers of which are of enormous size, and of great delicacy of texture and color. They are perfectly hardy, grow about six feet high, and will succeed in any soil not too heavy and wet. In June and July, they are covered with flowers like those represented in the engraving—which gives that of *C. lanuginosa*, one of the largest. It is impossible for us to represent in an engraving the delicacy and softness of the bluish lilac color of this flower. There is a variety *pallida* which is of a much lighter shade. The flowers of *Clematis patens* are nearly as large as the above, and of an azure blue, with brown stamens; it has in the gardens and catalogues sometimes the names *C. cerulea*, and *C. azurea grandiflora*. This species has produced several named varieties, among which are: *Amelia*, pale lilac, with yellow stamens; *Helena*, flowers at first greenish, but becoming pure white; *Sophia*, white, bordered with violet; *Louisa*, yellowish white, with brown anthers; and *mon-*

strosa, with partly double pure white flowers, which are smaller than those of the other varieties. The plants should be set in a sheltered place, as their large and delicate flowers soon have their beauty destroyed by any violent winds. *C. florida* is also a Japanese species, which has been a long while in cultivation. It climbs to the height of 12 or 15 feet, and bears a great profusion of large white flowers. There is a double variety, which is also white, and a purple one called *C. Sieboldii*, which was formerly grown only as a green-house plant, but which has proved tolerably hardy. All of the above should, in cold localities, be laid down and covered with earth, and they will bloom all the finer if this be always done. Like many choice things, these varieties are multiplied slowly. They are grown from layers and cuttings, and the choicer sorts are mostly propagated by grafting upon the root of some of the more common species of Clematis. The nursery catalogues have them at 50 cents and upward, according to their rarity. We have only noticed those which may be had in our nurseries; there are several fine varieties advertised by European florists, which are not yet offered here.

THE HOUSEHOLD.

Home Attractions. --- Tea, Coffee, Smiles and Baby Prattle.

The greatest safeguard a man can possess, the well nigh irresistible charm against all-house allurements and other evil, is an attractive, happy home of his own. The contented and loving wife has sundry valuable auxiliaries at hand, which judiciously employed will add not a little to the potency of her own smiles and cheerful temper. Among these we give good tea and coffee a high place. But these beverages must be good, full of aroma, and hot; not necessarily strong, though sometimes strength is a very good thing. There is a vast deal of very poor tea consumed, and a great deal that is good spoiled in making; and if this is true of tea, it is ten times more of coffee, if indeed the decoctions of roasted seeds, grains, roots, etc., which are so much drank, may be called at all by that name of so aromatic memory.

There is no evidence, so far as we can judge, that pure tea, or coffee used in moderation, produces any but pleasant effects upon adults. They each contain a highly volatile oil, which gives the pleasant flavor and is dissipated entirely by boiling. So the more either tea or coffee are boiled, the poorer they are. The alkaloids, *thein* in tea, and *cafein* in coffee, are dissolved only by boiling hot water. So the "drawing" of tea for about five minutes for green, and 10 minutes for black, as is well known, extracts both of the desirable ingredients; and the percolation of hot water through freshly burned and ground coffee attains the same result for this beverage. The tea must be good and the coffee must be pure, if the wife would be sure of spending a pleasant evening with her refreshed and reinvigorated husband.—See in our picture, the baby boy has caught sight of "papa" as he is coming home across the fields from his day's work, and in his joy has well nigh wrought a catastrophe.

To Retain the Aroma of Coffee.—

Baron Liebig gives the following simple directions: "The berries of coffee, once roasted, lose every hour somewhat of their aroma, in consequence of the influence of the oxygen of the air, which, owing to the porosity of the roasted berries, can easily penetrate. This pernicious change may best be avoided by strewn over the berries, when the roasting is completed, and while the vessel in which

it has been done is still hot, some powdered white or brown sugar. (Half an ounce to one pound of coffee is sufficient.) The sugar melts immediately, and by well shaking or turning the roaster quickly, it spreads all over the berries, and gives each one a fine glaze, impervious to the atmosphere. They have then a shining appearance, as though covered with a varnish, and they in consequence lose their smell entirely, which, however, returns in a high degree as soon as they are ground. After this

Household Items for "Men Folks."

The following hints, much needed by some men, and especially by many half-grown boys, we find going the rounds uncredited. The style is rather too much of the "slang" order, but we pass this by, for the sentiment. No one whom they do not hit, will take any offence: "Do men folks ever think how much work they make a woman by going into a house with muddy boots? It would

take but a moment for them to use the scraper and leave outside the dirt which they track over the floor, oil-cloth and carpet, and which they leave on the stove-hearth or fender—all of which must be mopped, scraped and wiped off. If your wife, mother or sister fail to clean up the muss, you great big boy or man have made, what a howl you raise because 'the things about the house look so!' And when you go home at noon or night, do you ever notice how you act? Of course not, or you would not do such careless tricks. You enter the door—with a slam it half closes, and some woman must shut it after you. Your overcoat is thrown on a chair in one corner of the room—your hat sails away in another corner to light upon a stand or under it, gloves are thrown on a table, neck-wrapper hung on the first handy chair, and down you sit in the center of the room where every one must go around you. After you have been two hours in a house, the place resembles the ground of a cat squabble. Hat, boots, coat, newspapers, overcoat, gloves, books, jack-knife, hair brush, and all articles you may have in your hands are scattered as though a hurricane had swept through the room; books, papers, magazines, almanac and memorandum book, are routed from their place. And when you have to leave, what a time is there! No one knows where your things are. 'Where is my hat?' 'Where is my overcoat?' 'Who had my gloves?' Every one in the house is put upon the witness stand, and it is more trouble to get you started



"PAPA IS COMING."

sugar-coating, they are to be taken quickly from the roaster and spread on a cold plate of iron, so that they may cool as soon as possible. If the hot berries are allowed to remain heaped together, they begin to sweat, and when the quantity is large, the heating process, by the influence of air, increases to such a degree that at last they take fire spontaneously. The roasted and glazed berries should be kept in a dry place, because the covering of sugar attracts moisture."—Devices have been patented for preserving the aroma in ground coffee. They depend upon mingling small quantities of gum or mucilage with the coffee, or pressing it into cakes and coating them with the same.

down town than to launch a steamer or to start a new stage coach. Then after you are gone, the women must spend a quarter of a day, more or less, in picking up things which you have scattered. The trouble is, you 'don't think.' It would take but a moment to hang up your coat and hat, to put your gloves in your coat pocket, to draw your neck-wrapper through the sleeve of your overcoat, and to cultivate your bump of order. It takes but a moment to put an article in its place and then you know where it can be found. The woman who takes care of the house has enough to do, without choring after large boys or waiting on a lot of men all day. A woman's work is never finished.

You expect her to keep the house neat and tidy. If it is not so, you run to a saloon. You expect her hair to be always smooth, her dress always in order, her stockings always neat, your clothing always in order, the dust swept from its thousand gathering places, something good to eat three times a day besides lunches, and her to be as neat and attractive as she was the night you popped the question. How can she be all this, if she has to spend half her time picking up what you carelessly throw down? If your wife, mother or sister be neat, you should be; if not, teach her neatness by good examples."

About Arrowroot.

The Doctor orders a patient to be fed on "Arrowroot gruel," and you go to the store to buy it, and are served with neither arrow nor root, but only a white powder, and wonder why that starchy looking substance should be called Arrowroot. The origin of many of our names for things in common use, is often quite difficult to trace; but in the present case the tradition is preserved; the ar-



ARROWROOT.

ticle in question takes its name from the root that furnishes it, and that root was so called because the natives of Jamaica were in the habit of applying it, bruised, to the wounds made by poisoned arrows. The plant is a native of the West Indies, and is botanically named *Maranta arundinacea*; the first, or generic name being in honor of an Italian botanist named Maranti, and the other name means reed-like. Several species of *Maranta* are cultivated in hot-houses for the beauty of their foliage, which is sometimes marked with different colors. The present species grows two or three feet high, and has the form given in our engraving, which also shows the small white flower and the large scaly root, or tuber. The plant is cultivated in the West Indies, particularly in Bermuda, and before the war its culture had made some progress in Georgia and a few of the other States in the South. The Arrowroot of commerce is starch prepared from the tubers of this plant, by grating them on a wheel rasp, and then carefully washing away the fibers and all other matters except the starch, which is then thoroughly dried and packed in boxes and casks for exportation. It is a lumpy powder—more white and glistening than other forms of starch, and is superior to them on account of its great purity. It is free from any peculiar odor or taste, is easily digestible, and well suited to the diet of invalids. It may be used for puddings, blanc-mange, etc., in the same way as corn starch. Potato starch is sometimes falsely sold as Arrowroot, but it has not such a dead white appearance, and can usually be detected by its odor, though sometimes

it is necessary to make use of the microscope to detect the fraud. The grains of potato starch are larger than those of arrowroot, and have different markings. A tablespoonful of arrowroot, first mixed with a little cold water and then added to a pint of boiling water, will, when cool, form a nearly transparent jelly, which, flavored with sugar, lemon, etc., makes a pleasant sick diet. With the same quantity of milk a blanc-mange is produced.

About Potatoes and Cooking Them.

Excepting wheat, no article is so largely used for food as the common potato—called the "Irish," and at the South the "Round" potato to distinguish it from the sweet potato. 4 pounds of potatoes contain about 3 lbs. of water and 1 lb. of solid matter, taking the average of the different varieties. Fresh lean beef contains just about the same proportion of water. A large part of the solid portion of potatoes, is starch, as is the case with wheat, corn, and indeed most vegetable substances consumed as food. 400 lbs. of potatoes yield about 300 lbs. of water; 64 lbs. of starch; 15 lbs. of sugar and gum; 9 lbs. of protein or nitrogenous compounds which furnish direct nutriment for muscles or lean flesh; 1 lb. of oil or fat, and 11 lbs. of woody fiber. If dried and burned, the 400 lbs. of potatoes yield nearly 4 lbs. of ashes. These 64 ounces of ashes consist of about 35½ oz. of potash; 8 oz. of phosphoric acid (which enters largely into the composition of bones); 8¾ oz. of sulphuric acid (oil of vitriol); 4½ oz. common salt; 2¾ oz. of silica; 3¼ oz. of magnesia; 1½ oz. of lime, and nearly 1½ oz. of soda.—It will thus be seen that the potato is a very good article of food. The starch, sugar, gum, and oil, meet a great want of the animal system, giving material for respiration and the formation of fat. The protein compounds supply muscles, and the salts in the ashes afford material for bones, etc. A pound of potatoes furnishes as much material for fattening and warming the body, as a pound of beef, while costing scarcely one-tenth part as much.

Cooking.—The starch in potatoes exists as little grains, 10 or 12 of them together, in cells. Heating the potato by boiling, steaming, or baking, causes these cells to burst, and the water unites with the starch grains, swelling them. If all the water contained in the potato thus unites with its starch, the potato cooks dry and mealy. If only part of the water is absorbed by the starch, then the potato is watery. The best mode of cooking this esculent is by baking, which drives off all the water that does not unite with the starch. If boiled, cook them rapidly, and when just done, pour off the water, and dry them out; then they are improved by mashing fine to free them from indigestible lumps; this, of course, can be done by the teeth of those who prefer their potatoes "undressed." Frying them, dries up the starch, leaving it similar to charcoal, and when done brown they are almost as indigestible as so much charcoal or wood.

A New Discovery—The Ague Plant.

The "ague plant" has recently been discovered, —not the plant that cures ague, but the one that causes it. Here is one plant, at least, that we can notice without being overwhelmed with applications for seed. To be sure it is a little thing, and takes a good eye, aided by a good microscope, to find it, but when found, it can not be said it "is no great shakes," for it is the "genuine Shaker seedling" itself. Doct. I. H. Salisbury, of Cleveland, Ohio, announces in the American Journal of the Medical Sciences, that fever and ague is caused by a minute plant, which is found where stagnant water has just dried away. The spores, or reproductive dust of this microscopic plant, are diffused through the night damps, and being taken into the system by breathing, are the cause of that wide spread scourge, the ague. The habits of these minute plants completely accord with what was before known of the occurrence of miasm, and that they are the real cause of it has been shown by taking boxes of earth containing them, to places

where an ague was never known to occur. In about two weeks after the ague plant was taken there, well marked cases of the disease appeared. This discovery does not as yet increase our knowledge of the means of ridding ourselves of the plant, but it will probably lead to that—just as one if he can only find out "how he got such a cold?" is already half cured. The spores only rise in the night, and then to a height varying with the locality, of from thirty to one hundred feet. This explains why night air brings on ague, and why elevated localities are free from it. After the ague seed is taken into the system, the plant is propagated there, and the patient becomes a sort of animated hot-bed.

Youmans' Household Science.—This valuable book we have recommended in former times, and call attention to it again now. It treats somewhat fully of the science of living, especially of cooking, the why and wherefore; of the various kinds of food, beverages, clothing; of heat, light, air, cleansing, etc., etc., in nearly 500 pages. The first part may be rather scientific for the unlearned reader, yet no one can go through the book, or read any part of it, without learning much that will be practically useful in household work, and gaining many ideas that will furnish food for thought and interest one's mind while engaged in the most common operations of daily labor in the house. We should be glad to see a copy owned, read, and studied in every household—by men as well as women. It is sent post-paid by mail for \$1.75.

Hints on Cooking, etc.

Plain Pies, etc.—A lady contributes the following to the *Agriculturist*:—"I send a recipe for a pumpkin or squash pie-crust, that I think will be new to most of your readers. At the present high prices of lard and butter, many perhaps will feel like eating pies made in this way, that would not in any other; it is simply this: Thoroughly grease a platter and while warm, sprinkle it with dry Indian meal to the thickness of an ordinary crust, then pour in your squash prepared in the usual manner. It soaks the meal sufficiently to form a crust hard enough to cut a piece out well, and tastes somewhat like a baked Indian pudding; no one perhaps would suppose it could be fit to eat, but try it.

"One reason why pies are considered so injurious is, that the fluids of the stomach cannot act on so much grease. One of the first chemists in the country once told me, that fruit sewed up in a bladder would give as much nourishment as if encased in pastry as rich as you will find in many houses. A much more healthful article is a crust raised like biscuits, or made with an alkali (either soda or saleratus,) and an acid, as cream of tartar, sour milk or cream, or buttermilk; an under-crust raised thus answers nearly as well as the usual kind.

"Molasses Gingerbread.—One cup hot water, piece of butter half size of an egg, one cup molasses, teaspoonful ginger, cloves and saleratus. Mix the whole so thin that it will pour easily.

"The above are plain cheap and simple, but knowing your paper is intended for all, I send them. In most of the lady's books the recipes are so costly and require so much skill in making as to be but little used only by the rich."

Pressed Chicken.—Boil the chicken with the giblets until the bones can be easily pulled out. Then season to taste, with salt and pepper (a little thyme is a great improvement), and mince quite fine; after which put it in a dish or pan, with weights enough upon it to press it firm; set it away to cool, and when turned out, it makes a nice side dish for dinner, or relish for tea.

Welton Veal.—Boil 4 eggs hard; slice thin; place round the bottom of a 2-quart bowl; lay over these a layer of uncooked veal cut very thin; then a layer of cooked ham cut *very thin*; fill the bowl with these alternate layers; cover it closely with a plate, and put a weight on the top of the plate, and cook in a steamer three hours. Set it in a cool place till the next day, when it will be jellied.

BOYS & GIRLS' COLUMNS.

The Sweet-Brier and her Neighbors.

A sweet-brier grew thrifflily in a tangled hedge, on the border of a field where the owner had planted corn and potatoes. Until that year the ground had not been plowed for a long time, and grass, dandelions and daisies, with here and there a thistle and dock, were the only acquaintances the sweet-brier had made, excepting the braimbies and elders that ramble with her through the hedge. So, when the bright green spires of corn and the dull-faced potato tops showed themselves, the sweet-brier watched them with much interest. "See how straight and prim he pushes up, and how handsomely he dresses," she whispered to her neighbor, the bramble, pointing to a thriving stalk of corn that stood near. "He may well do that," replied the bramble, "for you never saw such a greedy fellow. He is not contented with the rich deposits I saw the farmer leave for him, but he must send out his roots into our bank here, and I hardly know how I am going to live this summer." The corn, however, pushed ahead without seeming to notice these remarks, though I think it made him somewhat vain, for he soon added a handsome knot of silk to his green sash, and set a waving feather jauntily in his cap. He was certainly proud of his wealth, for afterward he changed his dress to yellow and brown, and hung a heavy purse at his girdle, through the meshes of which you could see the beautiful color of shining gold.

The potatoes were a mystery to their neighbors. They seemed content to dig away and mind their own business, the mole told the bramble that they were rich too, for he had stumbled over some of the stores they had hid; they certainly might be, for they dressed shabbily, spent nothing except for mere necessities, and seemed satisfied to live in the very lowliest manner.

The sweet brier, although she was amused by what was going on around her, was too kindly tempered to criticize severely; she contented herself with making the best use of her own means, spreading perfume around her for the enjoyment of others. She was pained when in autumn she saw the corn robbed of his glittering wealth and left to shiver in the chill blast, and felt some little sympathy for the fate of the potatoes, whose treasured stores, hidden with such miserly care, were dragged to light and taken away. And when, one day after a shower, the farmer attracted by her sweetness, transplanted her to twine around the window of his best room, she seemed in no wise elated by the promotion, but only grew more beautiful and gave out more abundant fragrance in return for the richer soil of her new home.

A Small Loss—A Great Misfortune.

"I have lost more than one hundred thousand dollars to-day," said a gentleman in New-York City to a friend who was spending the evening with him, and who related the circumstance to the writer. "How did it occur?" was asked. "Stocks which I have on hand, are worth that amount less than they were yesterday," was the reply. He was a broker, doing a very large business in Wall-st. He must have felt very sad over such a serious loss, one would naturally think. Not at all, at least not that any one could discover. He talked and laughed as cheerily as usual, and probably slept not an hour less that night on account of it. After leaving the broker, our friend on his return home while crossing the park, met a boy crying bitterly. "What is the matter?" he asked. "I—I—I—lost—my money!" sobbed the little fellow. It must have been a large amount, judging from his passionate grief. "How much did you lose?" was asked. "Two cents." And he burst out crying afresh—his whole capital was gone. Of course, his fortune was soon repaired, and the two cents which he received, without doubt gave him more real pleasure, than would the recovery of the larger sum by the rich broker.

An Amusing Toy.

Procure a large sized piece of pith from a ripe corn-stalk, and with a sharp knife carve out a small image of a man or woman. The face can be properly colored with red and black ink. Hollow out the back part of the head and insert a small bullet, which should be concealed by pasting in over it a shaving of pith. Make the feet a little rounding on the soles. Thus prepared the image will persist in standing on its head, and cause much amusement to the little ones.

The Prize Puzzles.

Many contributions in competition for the prizes offered in the January number, have been received up to the present date, Feb. 24, but, so far, only a few original ones. It was distinctly stated in the offer that the name of the author must accompany each puzzle or problem; but as

the matter seems not to have been fully understood, the time for reception is extended until April 1st. Only original contributions can compete. The offer made, is:

1. TWENTY DOLLARS for the best *Mechanical Puzzle*.
2. TEN DOLLARS for the best *Arithmetical Problem*.
3. TEN DOLLARS for the best *Heroglyphical Rebus*.
4. FIVE DOLLARS for the best *Enigma or Riddle*.
5. FIVE DOLLARS for the best *Conundrum*.

There is yet time for somebody to win each of these.

The Game of Checkers or Draughts.

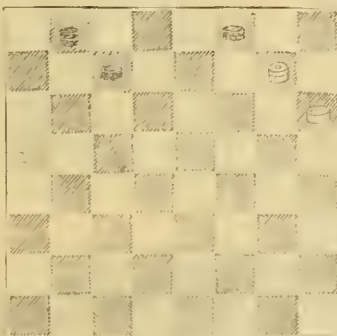
HISTORICAL.—(Continued from page 67.)—The kind used by King Rhameses, 1300 B. C., who is represented on the walls of his palace, playing Draughts with the ladies of his household, resembled small nine-pins, and seem to have been about 1½ inches high, standing on a circular base of half an inch in diameter. Some have been found of ivory, 1½ inches high, and 1¼ inches in diameter, with a small knob on the top. The opposite sets of pieces were distinguished, sometimes by their form, one set being black and the other red or white, or one set round and the other square tops. It is uncertain how the Egyptians played the game, though from the position of some of the pieces in the paintings, it would seem they played it the same as played now.

LAWS OF THE GAME.—(Continued from page 67.)

7. The first play must be invariably made by the player having the Black men, and that alternately to the end.
8. At the end of five minutes, (if the move is not been previously made,) time must be called by the person appointed for that purpose, in a distinct manner, and if the move be not completed on the expiration of another minute, the game shall be adjudged to be lost through delay.
9. When there is only one way of taking one or more pieces, time shall be called at the end of one minute, and if the play be not completed within another minute, the game shall be adjudged lost through improper delay.

POSITION NO. 3.

Black.



White.

Black to play and win.

(Known to experts as "Anderson's second position.")
Solution to Position No. 2. (See February No., page 67.)

White.	Black.	White.	Black.
1-20 to 16	32 to 28	10-23 to 18 a)	(b) 12 to 16
2-16 " 11	28 " 32	11-14 " 15	(c) 16 " 20
3-11 " 7	32 " 27	15-16 " 18(d)	24 " 19
4-7 " 2	27 " 32	16-32 " 23	(e) 19 " 16
5-2 " 6	32 " 27	17-18 " 23	16 " 11
6-6 " 10	27 " 32	18-23 " 19	11 " 8
7-10 " 15	32 " 27	19-23 " 32	8 " 11
8-15 " 18	27 " 32	24-27 " 17	11 " 8
9-18 " 93	32 " 24	21-27 " 23	8 " 3
10-23 " 27	28 " 32	23-33 " 18	3 " 8
11-19 " 23	32 " 25	23-18 " 15	8 " 12
12-27 " 32	23 " 21	24-15 " 11 and wins. (f)	

(a)—32 to 28, Black draws. (b)—24 to 23, or 24 to 19 loses. (c)—16 to 19, or 24 to 23, loses. (d)—32 to 28, Black draws. (e)—20 to 24, loses. (f)—Positions similar to this often occur, and players should note it carefully.

GAME NO. 3.—CROSS OPENING (*)

Black.	White.	Black.	White.
1-11 to 15	23 to 18	11-15 to 12(k)	25 to 18
2-8 " 11	(a) 27 " 23	12-14 " 23	24 " 20
3-4 " 8	23 " 13	15-8 " 11	21 " 24
4-9 " 14(b)	13 " 9	17-23 " 26	19 " 15
5-5 " 14	22 " 17	18-10 " 19	21 " 8
6-15 " 18(c)	26 " 12	19-16 " 19	8 " 4
7-11 " 15(d)	17 " 13	20-23 " 30	4 " 8
8-7 " 11	22 " 17	21-19 " 27	22 " 25
9-2 " 7(e)	32 " 27	22-23 " 27	25 " 22
10-1 " 5(f)	30 " 26	23-30 " 23	22 " 15
11-5 " 9(g)	(h) 26 " 22	24-17 " 22	(i) 17 " 11
12-11 " 16(j)	27 " 23	27-25 " 22	14 " 5
13-18 " 27	(j) 22 " 18	28-22 " 15—drawn.	

(*) So called, because the second move is played across the move of the first one. It is formed by the first two moves. (a)—26 to 23 draws. (b)—10 to 14, draws. 9 to 13, White wins. (c)—6 to 3, draws. 14 to 18, White wins. (d)—11 to 16, White wins. (e)—3 to 7, White wins. (f)—11 to 16, White wins. (g)—11 to 16, White wins. (h)—26 to 23, Black wins. (i)—18 to 22, White wins. (j)—24 to 20, Black wins. (k)—14 to 23, White wins. (l)—15 to 15, Black wins.

Answers to Problems and Puzzles.

The following are the answers to the puzzles, etc., in the February number, page 67. No. 188. *Arithmetical Problem*. Only one answer received; left open for another month. (This is the best thing we have seen for a long time.)...No. 183. *Illustrated Rebus*.—"Be above meddling in a family between man and wife."...No. 190. *Mathematical Problem*.—Rule: From the square of half the given dividend, subtract the said dividend; to the square root of the remainder, add half the said dividend, and it leaves the required divisor...No. 191. *Anagrams*.—1. Misanthrope; 2. Absurdity; 3. Adventores; 4. Attraction; 5. Considerable; 6. Companions...No. 192. It is allowable to use Z, instead of S, in the different spellings...No. 193. *Riddle*.—Watermelon...No. 194. *Illustrated Rebus*.—Where there's a will, there's a way...No. 195. *Illustrated Rebus*.—Where there's a will, there's a legatee (leg-at-tee)...No. 194.—*Mathematical Problem*.—(Jan. No., p. 26)—8 boys, 9 girls, 10 young men.

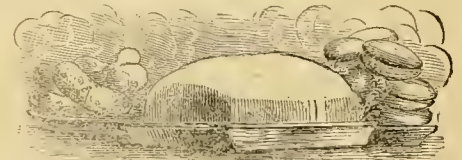
The following have sent answers up to the date of Feb. 23: Wm. D. Barnhart, Schuyler Duryea, Wm. F. Sherman, Eugene M. Cole, E. G. Studley, Reuben E. Cronkhite, 184; G. S. Comter, 186, 187; Wm. F. Sherman, 186, 187; A. M. C., 189; Thos. O. Falvey, 193; E. G. Studley, 186, 187; Clara Pratt, 183, 184, 185, 187; William C. Johnson, 183, 184; J. Cotton, 189, 191, 193, 195; E. R. Taber, 184, 186, 187; M. S. F. and L. H. F., 184, 186, 187; Marshall T. Bryan, 184, 186, 187; Mary Randall, 184, 186, 187; Abner Stocking, 184, 186, 187; Theodore A. Funk, 184, 186, 187; Wm. O. White, 184, 185, 186, 187; R. Ellis, 184, 186, 187; Reuben E. Cronkhite, Addie Miller, 186, 187; Carrie S. Begby, 186, 187; J. C. Bell, 186, 187; Augustus Hunter, 186, 187; Mary Kate Tutthill, 186, 187; Brooklyn Girl, 187; Edward P. Hascall, 183; A. Jackson, 186, 187; Frank Howard, 194; E. G. Studley, 188, 193; Frank W. Lawin, 193; Lloyd T. English, 186, 187; Cornelius Hoagland, Jr., 184, 193; S. M. Close, 184; Hattie M. B. McIntosh, 186, 187; Frances L. Hine, 193.

New Puzzles to be Answered.

No. 196. *Charades*, by two little girls at Springfield, O.—1st. I am composed of 15 Letters. My 10, 12, 14, 13 is a penalty. My 5, 14, 12, 10, 1, 3, 4 distinguishes an officer. My 9, 3, 8, 11, 14 is what all good children try to do. My 15, 7, 14 is a dull color. My 6, 1, 4 was "The Piper's Son." My 10, 2, 14 tells for what we wrote this enigma. My whole is a book recently published by a popular author.—2d. I am composed of 13 letters. My 10, 7, 1 is a wise little insect. My 3, 5, 9, 2, 13, 7 is one of Tennyson's poems. My 11, 13, 3, 1 is a vegetable not hard to beat. My 1, 4, 6, 3 is what everybody should be. My 8, 5, 9 is the smallest mark ever made. My 12, 3, 7, 8 is enjoined in the new Testament. My whole is often read around myself.—3d. I am composed of 15 letters. My 3, 4, 9, 7 is what nobody should be. My 5, 11, 14, 10 distinguished some of Pharaoh's cattle. My 2, 11, 7, 8 is the dwelling place of an Arab. My 5, 3, 7, 2 is a church fast. My 5, 12, 1, 2 means hark! My 13, 4, 9, 5, 15 is a name often applied to a newspaper. My whole is a busy day at the Post-office.

No. 197. *Word Puzzle*, by Lizzie V. Hess, Centre Co. Pa.—I am an article of agriculture; behold me and I am what is produced by motion; behold again and I do that without which we could not live; behold again and I am a preposition; take off my head once more, nothing is left but a common drink.

No. 198. No. 199. *Illustrated Rebus*.—Something growing at the West, which is said to be very terrible to Swine.



No. 199. *Picture Puzzle*.—The above picture is much like the next one below. Please explain the resemblance.



No. 200. *Illustrated Rebus*.—Very good advice for all.



No. 201. *Conundrum*.—Of what color is this page?



TICK! TICK! TICK!—Engraved for the American Agriculturist.

Two wonderful playthings! The child listens with astonishment and delight to the "tick, tick," of the watch—the grandfather's smile of happiness, shows the pleasure he enjoys with his precious little plaything, the baby. The child may well be interested by the wonderful instrument; it is a triumph of ingenuity, requiring the efforts of many men for a long period of time to make it so nearly perfect. It appears almost like a living thing; but it must be wound up every day, and at last it will be worn out and useless. The child is animated by a power that will never cease. It will keep the body in motion for many years perhaps, just as the main spring causes the wheels and the hands of the watch to revolve. You can feel the "tick" of this life clock, by placing your hand upon the wrist, or over the heart. At some time those cunning fingers that now grasp the plaything, the eyes that are lit up with pleasure, the lips moving with winning words, will be stilled by death, but the main spring, the spirit, will yet be active; it is wound up for eternity.—Nothing in this beautiful picture is more interesting, or more clearly shows the skill of the artist, than the likeness of the two faces. Although many years are marked in deep lines on the cheeks of the old man, a heart full of love has kept his features pure and bright. No selfishness, or evil passion is there; it is a face that any child would trust, and when the spirit that has made it so attractive passes away, who can doubt that it will be beautiful, and fitted to live in a brighter world?

Expansion by Heat—Exception.

We can hardly explain *why*, but it is a fact that almost every thing is expanded or made larger by heat. The blacksmith makes the wagon tire a little smaller than the wheel, and then heats it. The heat expands the iron

and makes the tire so large that it will easily slip over the rim of the wheel. He then cools it quickly, so as not to burn the wood, and it shrinks up with great power, binding the felloes, spokes and hub together very strongly. The iron rails of the railway expand so as to touch each other in warm weather, and contract so much in very cold weather, that you can almost put your finger between the ends of the rails. The clock pendulum becomes longer in warm weather and swings slower, while it shortens in cold weather and goes faster; so with a watch spring. A dish of water even full when cold, will expand so as to overflow when heated, even far below boiling.—But between $39\frac{1}{2}^{\circ}$ and 32° , water expands. Seven quarts of water will expand so much by freezing that it will make eight quarts of solid ice. This is a very remarkable exception to the general rule that heat expands and cold contracts bodies, and we can see the wisdom of the Creator in so ordering it. If water kept contracting down to the ice point (32°) it would of course grow heavier and sink to the bottom, and the consequence would be that our rivers and lakes would become solid masses of ice, which would not thaw out in a whole summer. Instead of this, the expanded, lighter ice floats on the surface, and being a non-conductor of heat, it protects the water below it from giving off much heat, and thus keeps it from freezing. As the water in freezing becomes one-seventh part lighter, one-eighth part of a cake of ice will float above the surface. So if we see an iceberg, or a cake of ice, we may know that there is seven times as much ice in the water, as there is above it.—*Questions.* If an iceberg is one mile square and rises 100 feet above the surface, (1) How many cubic feet of ice are there in all? (2) How many pounds does it weigh, allowing a pint of water to weigh a pound, and one gal-

lon to measure 231 cubic inches? Remember to calculate for the expansion of the water in freezing.

Brains are the Best Tools.

Many of our readers will remember how the mammoth steamer Great Eastern was saved from shipwreck a few years ago, by the skill of an American engineer who happened to be a passenger on board. Some derangement of the rudder had occurred during a severe storm. The huge structure became unmanageable, and was being helplessly rolled about like a log by the furious waves. The ship's carpenters had exhausted their ingenuity in trying to remedy the defect, and the case seemed almost hopeless, until Mr. Towle, the American referred to, contrived a very simple apparatus by which the sailor were enabled to control the ship's movements, and bring her safely to port. He had learned how to use his brains.—A young man lost the use of his right arm, by paralysis; but his brains are left, and right serviceable he has made them. They have furnished the industry, perseverance and pluck, by which his left hand has been trained to guide the pencil and brush of the artist, and his name already ranks high in the profession. The *Agriculturist* owes some of its finest embellishments to his talent.—A blind man invented one of the most successful attachments to the reaping machine; another by his observations on bees, awakened an interest on the subject that has led hundreds of sharp-eyed investigators to make their curious habits a study, adding important ideas to the world's knowledge, and luxury and wealth to its stores. The list of such is too long to recount here, but it is by no means yet complete; many as yet unknown are preparing to enter it; your brains, young reader, rightly used may help to swell the number

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will be furnished by the subscribers, either singly or in pairs (not akin), and sent by express to any part of the United States, Canada, or South America. For particulars send for Circular. Address JAMES YOUNG, JR. & CO., Marshalltown, Chester Co., Pa.

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I have as good and pure stock as can be found in the country. For prices, &c., send for Circular. W. C. CONDIT, Crinell, Iowa.

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Greatly surpass all others in excellence and value for all purposes. The Iona equals the best European kinds in the quality of its fruit, and exceeds them in some important points, while in hardness, perfection of ripening, and constancy of abundant produce it excels our most hardy native sorts.

I have prepared a pamphlet of about thirty large pages, which, besides other important matter pertaining to grapes, contains a full account of the characteristics of the **IONA** and **ISRAELLA**, with their **ORIGIN** and **HISTORY**.

It has also accurate representations of **IONA** and **ISRAELLA** vines in bearing. The method by which these were produced will furnish hints for those who desire to obtain seedlings of like hardness and excellence.

It contains also Price Lists, and a description of the vines for sale at Iona.

The great importance of having wood (that is, buds or eyes,) from strong, mature vines, to propagate from, is fully recognized and acted upon by all intelligent vineyardists, in the countries where the vine is principally cultivated. Only from the best wood from well developed vines, can the best bearing, most hardy and enduring vines be produced. This is a fact that is worthy of particular consideration "when everything that will grow of these new kinds is forced into plants of a kind that have so often disappointed buyers." (See American Agriculturist, last volume, page 379, also page 392.)

Being the originator of these kinds, and having the original vines, and an abundance of mature wood prepared especially to propagate from for the production of the best and most hardy plants, I have in this respect as well as in many others, a very important advantage which no other Establishment can command, and which enables me to offer plants that for cheapness and quality, are worthy of the attention of every one who desires to plant a vine.

For the garden especially, only plants of high quality are recommended. I have several classes that are good vines, but not equal to best No. 1 for gardens, but which can be confidently recommended as cheap and excellent for vineyards, and also for propagators. These are not dwarfed by defective treatment, but were struck later in the season than the larger plants.

All interested are invited to call at the Island, and make thorough examination of the quality and character of the plants, prices, and methods of propagation.

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Regular Sorgo—by mail, 40 cents per lb. By Express, 25 lbs. or less, 35 cents per lb.; over 25 lbs., 15 cents per lb. Librarian Oomseana, or Otahettan Neazana, and Early Sorgo, by mail, 50 cents per lb.; by Express, 25 lbs. or less, 30 cents per lb.; over 25 lbs., 25 cents per lb., package included. This seed is warranted to be pure, being raised under our special direction, and from crops yielding 300 to 350 gallons per acre. Address CLARK SORGO MACHINE CO., Cincinnati, Ohio.

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Farmers! do you want New-England grown seed left at your doors as cheaply as it is sold in Boston, New-York, or Philadelphia? I have introduced my Hubbard Squash, Marblehead Mammoth Cabbage, and a score of other new vegetables to thousands of farmers, and am ready to send them to thousands more. Catalogue sent gratis to all who apply. It contains a list of nearly three hundred varieties of Garden Seed, (many of them new and rare, and not to be found in any other Catalogue,) a large portion of which are of my own growing. Never fear to order my seed, as I warrant all to reach the purchaser. Send early before the great rush comes. JAMES J. H. GREGORY, Marblehead, Mass.

ANOTHER SPLENDID NOVELTY from JAPAN.

Striped Leaved Japanese Maize.

This beautiful and valuable addition to our ornamental foliage plants was obtained in Japan, by Mr. Thomas Hogg, the well-known Nurseryman and Horticulturist, at New York, who sent seeds of it to his brother, Mr. James Hogg, in the spring of 1864.

It appears to be a variety of Zea Curagua, or the Peruvian Maize, as it in many respects differs from the Zea Mays, or Indian Corn, as it is called in the United States. It grows to a height of from five to six feet, and has its foliage alternate by opposite; the foliage is from two to three inches wide and about four feet in length. It is beautifully and evenly striped, or ribbed with alternate stripes of green and white, and in its earlier stages of growth is also striped with rose color. It resembles the Arundo donax variegata in appearance, but is of a much more elegant and imposing habit. Nothing in the way of a foliage plant can exceed in gracefulness and beauty, a group of three to five plants of this variety of Zea. The subscriber is happy to announce that he has secured the entire stock of this splendid novelty, and now offers the seeds in packets containing **Twenty Seeds at 25 cts. per packet, 5 packets for \$1.** The Trade supplied upon the most liberal terms. Address B. K. BLISS, Springfield, Mass.

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Dielytra (Dicentra) Spectabilis alba.

Another year's trial confirms what we have previously said of this charming novelty. Its delicate blossoms, graceful habit, and beautiful foliage, will cause it to become a general favorite, and no garden, however small, will be complete without it. It forms a pleasing contrast with the original variety, and as a decorative plant for the cemetery it stands unrivaled.

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	per oz.	4 ozs.	1/2 pound.	1 lb.
Large Red Wethersfield.....	20 cts.	70 cts.	\$1.15	\$2.00
Large Yellow Dutch.....	25 "	80 "	\$1.25	\$2.25
Yellow Danvers (true).....	25 "	80 "	\$1.50	\$2.50
White Portugal.....	35 "	\$1.20	\$2.00	\$3.75
Potato Onion Sets, per quart.				50

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A supply of the genuine article just received by the Subscriber, and will be mailed, post-paid, to all applicants upon receipt of price affixed. Packets containing 1 ounce, 20 cts.; 8 ounces, 80 cents; 1 pound, \$1.50. Directions for culture and curing accompany each package. Address B. K. BLISS, Springfield, Mass.

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SELECT VEGETABLES,

B. K. BLISS,

Importer and Grower of
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Would invite attention to his large and well selected assortment of the above, comprising the newest and most approved varieties, both of European and Home Productions, the quality of which can not be surpassed.

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The ELEVENTH EDITION, with supplement for 1866, enlarged and improved, contains upwards of ONE HUNDRED PAGES of closely printed matter, with many NEW and BEAUTIFUL ILLUSTRATIONS, and a descriptive list of upwards of TWO THOUSAND VARIETIES OF FLOWER and VEGETABLE SEEDS, including many CHARMING NOVELTIES, now offered for the first time in this country, with explicit directions for their culture. Also, a list of

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\$1 50	\$5 00	\$12 00

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peck.	bush.	bbt.
\$1 50	\$5 00	\$12 00

Garnet Chili.—Large and productive, a good keeper, fine for general crop.

peck.	bush.	bbt.
75	\$2 00	\$5 00

Cuzco.—White flesh, good size and flavor, and enormously productive.

peck.	bush.	bbt.
75	\$2 00	\$5 00

Early Stevens.—A new variety from Northern Vermont, extra early, of excellent quality, very productive.

peck.	bush.	bbt.
75	\$2 00	\$5 00

Extra Early White.—Very early, of large size, flesh very white, fine flavor, a fine market variety.

peck.	bush.	bbt.
75	\$2 00	\$5 00

Early Sovereign.—A favorite early sort, of good quality, keeps well.

peck.	bush.	bbt.
75	\$2 50	\$6 00

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peck.	bush.	bbt.
75	\$2 00	\$5 00

Delmahay.—A new second early variety from Ireland, medium size, of excellent flavor, very productive.

peck.	bush.	bbt.
75	\$2 50	\$6 00

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peck.	bush.	bbt.
75	\$2 00	\$5 00

New White Peach Blow.—A decided improvement upon the well-known "Jersey Peach Blow," flesh white, floury, of most excellent quality, cannot be too strongly recommended, a first rate market variety.

peck.	bush.	bbt.
75	\$2 00	\$5 00

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The following varieties of this valuable esculent will be mailed to applicants upon receipt of the price affixed:

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The following seeds, the purity and vitality of which can be confidently recommended, will be mailed, post-paid, to any address in the United States, upon receipt of the price affixed.

	oz.	8 oz.	lb.
BEETS —Early Bassano.....	15	\$ 60	\$1 00
Early Blood Turnip, Orange Turnip, Long Blood.....	15	45	80
White Sugar, Long Red, Yellow Globe, Mangel.....	10	40	75
CABBAGE —Early York, Large York, Battersea.....	25	1 25	2 00
Early Sugar Loaf (French), Red Dutch.....	35	2 25	4 00
Premium Flat Dutch, French Ox Heart, Drumhead, Large Bergen, Stone Mason, Drumhead Savoy.....	40	2 75	5 00
Winniestadt, Improved Early Wakefield, Little Pixie, Improved American Savoy, New Dwarf Elm.....	50	3 50	6 00
Marblehead Mammoth, enormous size, very solid.....	25		
CARROT —Half Early Paris, sure to head.....	1 50	9 00	16 00
Early Dutch, London, Asiatic, Walcheren.....	75	4 50	8 00
Carter's Mammoth, Lehighland, Early Erfurt.....	25		
CELERY —Seymour's White, Chrystal White, Red solid.....	35	1 75	3 00
Incomparable Dwarf, Crimson, Dwarf Imperial, purple.....	25		
CARROT —Improved Long Orange, extra deep color.....	20	80	1 50
French Long Orange, White Belgian, Altringham.....	15	75	1 25
Extra Early Short, Early Horn.....	20	80	1 50
CUCUMBER —Extra Early Russian, Long Green.....	25	1 25	2 00
Early Frame, White Spine, Short Green.....	15	75	1 25
CORN —Extra Early Dwarf Sugar.....	pt	25	qt. 40
Red Cob Sugar, Evergreen, Mammoth Sweet.....	"	20	" 30
Egg PLANT —Improved New York Purple, (very large).....	75		
KOHL RAB —Early White Vienna, Purple, (very large).....	40	2 75	5 00
LETTUCE —Early Silesia, Summer Cabbage, Large Indian, Paris Green and White Cos.....	25	1 75	3 00
MUSMELON —Green Citron, Nutmeg, Christiana.....	15	75	1 25
White Japan, extra fine flavor.....	50	3 00	5 00
WATERMELON —Mountain Sweet, Black Spanish.....	15	80	1 50
PARSNIP —Long White, Hollow Crown Sutton's Student.....	20	85	1 50
PEAS —Extra Early, Dan O'Rourke, qt. Tom Thumb, per quart.....	75		
Champion of England, Prince Albert, per quart.....	50		
PEPPER —Large Sweet Mountain, extra.....	50	3 00	5 00
RADISH —French Turnip, Oval shaped or Long Scarlet.....	15	75	1 25
SALISFY —A Vegetable Oyster.....	20	1 50	2 50
SPINACH —Round and Prickly.....	10	50	75
SPINACH —Sun Crookneck, Early Bush Boston Marrow, Hubbard, etc.....	10	60	1 00
Canada Crookneck, pure extra.....	20	1 25	2 00
Yokohama, Turban.....	15		
TURNIP —Early Flat Dutch, Early Red Top, Large Yellow Globe, Cow Horn, Long White French, Yellow Aberdeen.....	10	60	1 00
TURKISH —Squirring's Purple Top, Laing's.....	10	60	1 00
SAGE —Summer Savory, Sweet Marjoram, Thyme, Basil, Lavender, etc.....	p'kt.	10	

No order will be executed at the above rates for less than the amount specified. When smaller quantities are ordered, they will be sent at packet prices. For a more complete list of seeds with directions for culture, see our Catalogue, and "Guide to the Flower and Kitchen Garden."

Address B. K. BLISS, Springfield, Mass.

Collections of Kitchen Garden Seeds.

A COMPLETE ASSORTMENT OF VEGETABLE SEEDS FOR ONE YEAR'S SUPPLY, FOR A LARGE OR SMALL GARDEN.

The following Collections are made up in the most liberal manner, care being taken to give a sufficient quantity of all the best varieties and most useful sorts of Vegetables required in the Kitchen Garden.

Assortment No. 5, contains 55 varieties.....	\$3.00
No. 6.....	2.00
No. 7.....	1.50

The above are prepared expressly for sending by mail, and will be sent post-paid, upon receipt of prices annexed: Larger Collections which can be safely sent by express to any part of the country, as follows:

No. 1, \$20.00; No. 2, \$15.00, No. 3, \$10.00; No. 4, \$5.00.
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For a list of the contents of each Collection, see Catalogue pages 87 and 88. Address B. K. BLISS, Springfield, Mass.

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General Grant.—A new and superb variety either for exhibition or the table, perfect in form, solid and crisp, and of a most agreeable flavor. Many specimens were grown the past summer averaging 24 to 30 inches in length. It succeeds well also in the open ground. Packets containing 10 Seeds, 25 cents. Also the following English and German varieties, at 25 cents per packet. Ayre's Perpetual Black Spine, Cuthill's Black Spine; Ipswich Standard; Weedon's Symmetry; Victory of Bath; Giant of Arnsford; Roman Emperor; Minister-Abbey; Lord Kenyon's Favorite; St. Pius Ultra; Caster's Champion; Colney Hatch. Either of the above varieties will be mailed to applicants upon receipt of price affixed. Address B. K. BLISS, Springfield, Mass.

Connecticut Seed Leaf Tobacco Seed.

Be Sure and Get the Best.

A superior lot raised expressly for the subscriber by one of the most successful cultivators in the Valley of the Connecticut. —Packets with full directions for culture, curing, packing, etc., will be mailed, post-paid, to all applicants at the following rates: 1 ounce, 50 cents, 4 ounces, \$1.50; ½ pound, \$2.50; 1 pound, \$4.00. Prices to dealers in larger quantities will be given upon application.

Address B. K. BLISS, Springfield, Mass.

COLLECTIONS OF FLOWER SEEDS

BY MAIL.

For the accommodation of those who love the cultivation of Flowers, but who reside at a distance from where they can be procured, we have selected from our large assortment of **Flower Seeds** the most showy varieties, and those of easy culture, and put them up in assortments, which will be sent post-paid to any address in the Union at the following prices:

Assortment No. 1—contains twenty choice varieties of Annuals, \$1.00.

Assortment No. 2—contains twenty choice varieties of Biennials and Perennials, \$1.00.

Assortment No. 3—contains ten extra varieties of Annuals and Perennials, embracing many of the new and choicest in cultivation, \$1.00.

Assortment No. 4—contains five very choice varieties, selected from **Prize Flowers**, of English Pansies, German, Caratation and Picotee Pinks, Verbenas, Truffaut's French Asters, Double Hollyhocks, \$1.00.

Any one remitting \$3.00 will receive the four assortments, postage free.

Assortment No. 5—contains fifteen very select varieties of Green-house Seeds, \$3.00.

Assortment No. 6—contains one hundred varieties of Annuals, Biennials and Perennials, including many new and choice varieties, \$5.00.

Assortment No. 7—contains fifty varieties of Annuals, Biennials and Perennials, \$2.50.

Assortment No. 8—contains twenty varieties of hardy Annuals, Biennials and Perennials, for sowing in the autumn, \$1.00.

B. K. BLISS, Springfield, Mass.

Seeds of Florists' Flowers.

The attention of AMATEURS and FLORISTS is invited to the following list which have been carefully selected from the stocks of several of the most successful European and American growers, and are believed to be superior to any ever before offered in this country. Mailed, post-paid, upon receipt of price affixed, to any address in the Union.

ANTHRINUM (Snapdragon), finest hybridized.....	p'kt.	25
ASTERS, TRUFFAUT'S Ebony flowered, the finest grown.....	25	
AURICULA, from the finest prize varieties.....	25	
BALSAMS, Glenny's and Smith's prize, unequalled, each.....	25	
BELLIS PERENNIS, (Double Daisy), a general favorite.....	25	
CALCEOLARIAS, Herbaceous and Shrubby varieties saved from most beautiful spotted and mottled flowers, each.....	50	
CINERARIAS, from the newest and best named sorts.....	50	
COCKSCOMBs producing immense combs.....	25	
CARNATION & PICOTEE PINKS, from named varieties, each.....	50	
do perpetual flowering for pot culture.....	50	
GERANIUMS, Scarlet, from finest variegated foliage, each.....	25	
do from "Bull's superb collections" of all the newest varieties.....	50	
PRAGMATONUM, from finest Egg, French prize flowers.....	50	
GLADIOLI, from a collection of 125 varieties.....	25	
GLOXINIAS, from the finest erect and drooping varieties.....	50	
HOLLYHOCKS, from our own collection of 75 varieties producing flowers fully double of every shade of color.....	25	
LANTANA, from named flowers.....	25	
MIMULUS, from the finest new hybridized varieties.....	25	
do New Double flowering "Bull's" the leading novelty of the season, never before offered in this country.....	\$1 00	
PANSIES, from the finest English show flowers.....	50	
do New Fancy, beautifully edged marbled & variegated.....	50	
do Blue, Yellow, White, Black, Bronze, Striped, Yellow margined; Violet bordered with white; Marbled purple, in separate packets, each.....	25	
(The collection of eleven varieties of Pansies.....)	\$2 50	
PETUNIAS, Double, carefully hybridized by a noted German Florist.....	25	
PETUNIAS, BUCHANAN'S HYBRID, from the finest mottled and variegated varieties.....	25	
PORTULACA, New Double, in many colors, producing flowers as double as Roses, a most desirable acquisition.....	50	
PRIMULA SINENSIS (Chinese Primrose), saved from the finest fringed varieties, Rose and White, each.....	50	
STOCKS, New German, large flowering, finest mixed.....	25	
do Scarlet and White Intermediate, (Covenant Garden varieties), each.....	25	
do New White Wall-flower leaved, fine for pots.....	25	
SWEET WILLIAMS, HUNY'S PERFECTION and AURICULA FLOWERED, beautifully margined, laced and mottled, unequalled for beauty.....	25	
TROPEOLIN, finest hybridized bedding varieties of every shade.....	25	
TROPEOLIN LOBNIANUM, and its hybrids for green-house culture, many colors mixed.....	25	
WALL-FLOWERS, finest double, much improved.....	25	

The foregoing collection of 46 varieties for.....\$12.00.

Address B. K. BLISS, Seedsman and Florist, Springfield, Mass.

Bedding Plants, &c., by Mail.

Strong and healthy Plants of the following varieties will be securely packed and mailed post-paid, to any address in the United States, upon receipt of the price affixed.

12 Monthly Carnations, in different varieties.....	\$3.00
12 Hardy Carnations and Picotees, in different varieties.....	2.50
12 Florists' Pinks, in different varieties.....	2.50
12 Pompon Chrysanthemums, in different varieties.....	2.50
12 Large-flowering Chrysanthemums, in different varieties.....	2.50
12 Double Evergreens, in different varieties.....	2.50
12 Fuchsias.....	2.00
12 Scarlet Geraniums.....	2.50
12 Heliotropes.....	2.00
12 Lantanas.....	2.00
12 Petunias.....	2.00
12 Phloxes.....	2.00
12 Pansies.....	2.50
6 Salvias.....	1.25
12 Dahlias, (Pot roots,).....	2.50
12 Liliput Dahlias, (Pot roots,).....	9.00
12 Verbenas.....	1.50
27 Verbenas.....	2.75
3 Tritoma Uvaria.....	1.75
6 Pot Roses.....	2.00
6 Hybrid Perpetual.....	2.50
12 Gladioli, finest varieties, mixed.....	2.00
12 Double Italian Tuberoses.....	1.50
3 Japan Lilies, Imbrun, Roseum, Album.....	1.50

The selection of varieties to be left with us. No orders will be filled for less than the amount specified, at the prices named.

B. K. BLISS, Springfield, Mass.

Open Page Advertisements, \$1.25 per line of space.

THE GREAT AMERICAN TEA CO.'S SECRET!

The great secret of the unparalleled success of THE GREAT AMERICAN TEA COMPANY is in the fact that their rate of profit is based upon ENORMOUS SALES with a small percentage. The extent of business done enables them to buy Teas by the cargo, and to sell them at the usual cargo prices, thereby saving from three to five profits to the consumer, or about ONE HUNDRED PERCENT. The retail trade of the Company is based upon a sale of 1,000 chests per week.

The Company have leased extensive warehouses in the most central locations, and fitted them up in a style of magnificence very far surpassing anything ever before known in this country. It has been the aim of the Company to select localities that cannot fail to convene all sections of the metropolis and surrounding cities. The prices being uniform, customers can select either of our stores mentioned below, as may best accommodate them. By examining our list of prices, consumers of Tea and Coffee will see that they have been PAYING ENORMOUS PROFITS.

The Company continue to sell at the following prices:
OOLONG, 40c., 50c., 60c., 70c., 80c., 90c., best \$1 per pound.
MIXED, 40c., 50c., 60c., 70c., 80c., 90c., best \$1 per pound.
ENGLISH BREAKFAST, 50c., 60c., 70c., 80c., 90c., \$1, \$1.10, best \$1.20 per pound.
GREEN TEAS, 50c., 60c., 70c., 80c., 90c., \$1, \$1.10, best \$1.25 per pound.
YOUNG HYSON, 50c., 60c., 70c., 80c., 90c., \$1, \$1.10, best \$1.25 per pound.
UNCOLORED JAPAN, \$1, \$1.10, best \$1.25 per pound.
IMPERIAL and GUNPOWDER, best \$1.25 per pound.

These Teas are chosen for their intrinsic worth, combining in mind health, economy, and a high degree of pleasure in drinking them.

COFFEES ROASTED & GROUND DAILY.

GROUND COFFEE, 30c., 35c., 40c., 45c.—best 40c. per pound. Hotels, Saloons, Boarding-House keepers and Families who use large quantities of Coffee, can economize in that article by using our FRENCH BREAKFAST and DINNER COFFEE, which we sell at the low price of 80c. per pound, and warrant to give perfect satisfaction.

Consumers can save from 50c. to \$1 per pound by purchasing their Teas of the

Great American Tea Company,

Nos. 31 and 33 VESEY-ST., corner Church-st.
No. 640 BROADWAY, corner Bleeker-st.
No. 503 EIGHTH AVE., near Thirti-seventh-st.
No. 205 FULTON-ST., BROOKLYN, corner Concord-st.

Country Clubs, and Wagon Peddlers, and small stores (of which class we are supplying many thousands, all of which are doing well), can have their orders promptly and faithfully filled; and in case of clubs, can have each party's name marked on their packages as directed by sending their orders to Nos. 31 and 33 Vesey-st. We return thanks to parties who have taken an interest in getting up clubs.

CLUBS ordering more than Thirty Dollars can have the goods sent by Express, and pay the expenses on delivery of the goods. Orders for less than Thirty Dollars had better send Post-Office Drafts, or money with the order.

For the purpose of showing parties how to get up clubs, we append an order received a few days since—and it is only one of a great many, which vary in amount from \$50 to \$500—with the reply in answer to our request for permission to publish:

ERIE RAILWAY TRANSPORTATION OFFICE,
DUNELKE, Jan. 29, 1895.

The Great American Tea Company:
Dear Sirs:—Yours of the 29th of January is received and duly considered; in answer I would say that I have not the least objections to your publishing my order in full or otherwise, as you may wish; in fact I should prefer that you would; it may be the means of bringing before the working class the advantage to them of forming themselves into clubs, and purchasing their Teas and Coffees at the Great American Tea Company's Store. We still remain, yours, etc., Box No. 363, NEW YORK, N. Y. W. COOPER.

RETAIL DEPARTMENT,
NEW YORK, Jan. 15, 1895

J. W. Cooper, Dunkirk, N. Y.
Bought of THE GREAT AMERICAN TEA CO.,
Nos. 31 and 33 Vesey-st.

Terms Cash on Delivery.
3 lb English Breakfast—J. M. Cooper, at \$1 20.....\$3 60
3 lb Japan—J. M. Cooper, at \$1 25.....3 75
3 lb Gro. Cof.—J. M. Cooper, at 40c.....2 00
2 lb Y. Hyson—J. Bellin, at \$1 10.....2 20
5 lb F. B. & D. Cof.—J. Bellin, at 30c.....1 50
1 lb Y. Hyson—J. Long, at \$1 25.....1 25
1 lb Oolong—J. Long, at \$1.....1 00
2 lb F. B. & D. Cof.—J. Long, at 30c.....2 00
2 lb Y. Hyson—J. Carroll, at \$1 10.....2 20
2 lb Green Cof.—J. Carroll, at 35c.....70
1 lb Y. Hyson—J. Hayes, at \$1 25.....1 25
1 lb Oolong—J. Hayes, at \$1.....1 00
6 lb Y. Hyson—J. Burke, at \$1 25.....7 50
2 lb Y. Hyson—R. Pierce, at \$1 10.....2 20
3 lb Gro. Cof.—R. Pierce, at 35c.....1 05
1 lb Y. Hyson—J. Minan, at \$1 25.....2 20
1 lb Oolong—P. Moran, at \$1.....1 00
1 lb Y. Hyson—P. Moran, at \$1 10.....1 10
2 lb Gro. Cof.—P. Moran, at 35c.....70
3 lb Y. Hyson—Thos. Keen, at \$1 10.....3 30
3 lb Oolong—Thos. Keen, at 90c.....2 70

2 lb Y. Hyson—P. Hibler, at \$1 10.....	2 20
1 lb Oolong—P. Hibler, at \$1.....	1 00
2 lb Gro. Cof.—P. Hibler, at 35c.....	70
1 lb Y. Hyson—M. Keen, at \$1 10.....	2 20
1 lb Oolong—M. Keen, at \$1.....	1 00
6 lb Y. Hyson—M. Kyan, at \$1 10.....	6 60
1 lb Oolong—L. Ward, at 90c.....	4 50
2 lb Y. Hyson—A. T. Howard, at \$1 25.....	2 50
4 lb Gunpowder—M. O'Brien, at \$1 25.....	5 00
1 lb Y. Hyson—M. McD., at \$1 10.....	1 10
1 lb Gro. Cof.—M. McD., at 35c.....	35
2 lb Y. Hyson—A. Maloney, at \$1 25.....	2 50
2 lb Gunpowder—A. Maloney, at \$1 25.....	2 50
1 lb Mixed—J. Bowen, at 40c.....	40
1 lb Young Hyson—J. Bowen, \$1.....	1 00
4 lb Gro. Coffee—J. Link, 20c.....	80
1 lb Young Hyson—J. Link, 90c.....	90
1 lb Oolong—W. Sahian, \$1.....	1 00
2 lb English Breakfast—W. Sahian, \$1 10.....	2 20
2 lb Young Hyson—H. Buffin, \$1 10.....	2 20
2 lb English Breakfast—W. Deane, \$1 20.....	2 40
4 lb Gro. Coffee—V. Bohlen, 20c.....	80
1 lb Young Hyson—V. Bohlen, \$1 10.....	1 10
2 lb Young Hyson—J. Macé, \$1 10.....	2 20
2 lb Oolong—C. Vroman, \$1.....	2 00
4 lb Young Hyson—H. Newkirk, \$1 25.....	5 00
1 lb Mixed—J. Fannerville, at 10c.....	1 00
2 lb Young Hyson—B. Wilcox, \$1 25.....	2 50
2 lb Young Hyson—J. Tuohy, \$1 10.....	2 20
4 lb Ground Coffee—N. Jellett, at 20c.....	80
2 lb Gunpowder—J. Murray, at \$1 25.....	2 50
2 lb Gunpowder—J. McMahon, at \$1 25.....	2 50
1 lb Young Hyson—T. Sheahan, at \$1.....	1 00
1 lb Young Hyson—C. Hoffman, at \$1.....	1 00
1 lb Oolong—C. Hoffman, at \$1.....	1 00
4 lb Ground Coffee—C. Hoffman, at 25c.....	1 00
2 lb Young Hyson—S. McCroskey, at \$1 25.....	2 50
1 lb Oolong—C. Baker, at \$1.....	1 00
1 lb Young Hyson—C. Baker, at \$1.....	1 00
2 lb Young Hyson—T. Maloney, at \$1 10.....	2 20
2 lb Young Hyson—J. Maloney, at \$1 10.....	2 20
1 lb Oolong—G. Kaldenbeck, at \$1.....	1 00
1 lb Young Hyson—G. Kaldenbeck, at \$1.....	1 00
2 lb Oolong—Geo. Cox, at \$1.....	2 00
3 lb Young Hyson—Geo. Cox, at \$1 25.....	3 75
1 lb Gunpowder—T. Sheahan, at \$1 25.....	1 25
2 lb Young Hyson—T. Sheahan, at \$1 10.....	2 20
4 lb Gro. Coffee—J. Shilling, at 20c.....	80
4 lb Gro. Coffee—J. Kepler, at 20c.....	80
1 lb Oolong—J. McCormick, at 90c.....	90
1 lb Young Hyson—J. McCormick, at \$1.....	1 00
1 lb Gunpowder—H. E. Dow, at \$1 10.....	1 10
1 lb Young Hyson—H. E. Dow, at \$1.....	1 00
2 lb Gunpowder—J. Campbell, at \$1 25.....	2 50

Total.....\$146 25
Received Payment for the Great American Tea Co.
The following was received from another Club. It tells its own story:

CUBA, NEW-YORK, Feb. 1st, 1896.
TO THE GREAT AMERICAN TEA COMPANY.
Gents:—Yours of 29th came to hand, and in reply would say publish any thing you please as regards my order for Tea, and furthermore, the Tea gives perfect satisfaction and is a handsome one of my neighbors that I might be. There are others in this section who feel as though they were paying entirely too much for the whistle—quite a number are getting awake to the matter. We shall patronize the Great American Tea Company as long as it is for our interest to do so, for we are getting a little up edge-wise toward our Grocery-men. Tea box came plainly marked all right.

With all due Respect, Yours truly,

PHIL. CARRIER.

CHOICE SEED.

I would again invite the attention of the public to my Annual Catalogue of choice and reliable garden seeds, embracing over two hundred varieties, over one half of them of my own growing. I would invite particular attention to the following list of new, rare, or very desirable vegetables. Marbled Mammoth Cabbage, (the king of all cabbages, sometimes weighs 60 lbs., and averages 30 lbs. by the acre. No cabbage will grow so large in the hot south as this. My seed are grown from the best of the best of heads.) There are others in this section who feel as though they were paying entirely too much for the whistle—quite a number are getting awake to the matter. We shall patronize the Great American Tea Company as long as it is for our interest to do so, for we are getting a little up edge-wise toward our Grocery-men. Tea box came plainly marked all right.

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With all due Respect, Yours truly,

PHIL. CARRIER.

pea than the Champion of England, grows but about half as high, is sweet and excellent. Scarlet Flowering Bean, (an English bean, quite ornamental; grows about two feet high.) Extra Long Caseknife, (a very vigorous and productive variety; has given great satisfaction.) Concord Bean, (the earliest pole bean I have found; in quality resembles Horticulturalist, but yields much better.) Indian Chief Bean, (the best string pole bean known; always in condition for stringing.) Yard Long Bean, (foliage highly ornamental; bean a curiosity.) Jet Cranberry; Mottled Cranberry, (each of these are an improvement in health, vigorous growth and productivity, on the old-fashioned Cranberry or Tolly bean.) Tilden's New Tomato; New Mexican Tomato; Mammoth Chihuahua Tomato; Cook's Favorite; French Upright; Early York, and Bates' Extra Early Tomatoes, (for particular description of these, see my advertisement in another column.) Bates' Extra Early Sweet Corn, (earlier than Darling's Early, a variety of the sweet wrinkled kernalled corn, excellent for the table.) Golden Sweet, (early, tender, sweet, with a rich flavor, peculiarly its own.) Sweet Mexican Corn, (the sweetest and tenderest variety I have yet found.) Late Red Cob, old-fashioned eight-rowed sweet corn, (the ears of these two varieties grow to a very large size; quality sweet and very tender, keeping a long while in condition for table use.) Chufas, (very prolific; taste very much like a fine Coconut.) Hubbard Squash, (the driest, sweetest, and richest flavored of all winter squashes. I introduced this seed pure.) Yokohama Squash, (this new variety from Japan, has the finest grain of all squashes, with a rich, marrow-like taste.) Boston Marrow, (I consider my variety to be the purest in the United States; it took the first premium at the last Annual Fair of Mass. Hort. Society.) Para or Polk Squash, (a bush squash for late fall and winter use; in quality it resembles a rich Crookneck. My seed stock came from Para, and is perfectly pure.) Swiss Chard, (the best of all the Beet family for greens, the leaf stalks are used as Asparagus.) Chinese Sugar Cane, (imported seed; pure.) Athletian Cane, (by some preferred to all other varieties for cultivation in the North.) Covent Garden Radish, (very long, of extra bright green color; Market Gardeners try this.) Sturdy Wheat, (a new English sort, highly recommended for poor and elevated soils; less subject to blight and rust than other varieties, and has yielded 15 per cent. more than very variety with which it has come into competition.) Fejee Bean, (warranted to be both the earliest and the hardest of all bush beans.) Improved Green Globe Savoy Cabbage, (as reliable for heading as my Stone Mason, the quality of the Savoy is superior to all other varieties for table use.) Mammoth Millet, (extra tall heads, largest of all.) True Boston Curled Lettuce, (the most ornamental lettuce known.) Neapolitan Cabbage Lettuce, (this is one of the finest Cabbage lettuces yet introduced.) Six choicest varieties of Cabbage Lettuce, (the six finest native and foreign sorts in one package.) White Japan Melon, (very early, remarkably sweet, very popular.) Allen's Superb, (quality very superior; by some called "King of Melons.") Orange Watermelon, (new; when fully ripe the skin peels off like that of an orange.) Early Sebce Potato, (new; has all the characteristics of the excellent Jackson White, but is ready for market from ten days to fortnight earlier.) A decided acquisition.) Early Chenchy, (a new very early, dry potato, becoming quite popular in Boston Market.) Goodrich's Seedling, (new, quite early and productive.) Garnet Chili, (remarkably free from rot; large, solid, very productive; an excellent keeper.) Chick Tea, (used on the Continent of Europe as a substitute for coffee.) Yellow Lupins, (extensively used in Europe for subsiding the high temperature of the soil.) Agricultural Report.) Improved Long Green Chumbar, (extra long; very fine.) New Jersey Hybrid Chumbar, (one of the largest and best varieties cultivated. Ornamental Gourds, (many varieties in one package, including Dipper Gourd.) Sutton's Students Parsnip, (new, originated in England; desirable.) Chinese Rose Winter Radish, (decidedly the best of all the winter sorts, an acquisition.) Hood's Dwarf Imperial Purple Celery, (a new variety from France.)

Each of the above will be forwarded, post-paid by me, at 15 cents per package, and warranted to reach the purchaser. Catalogues sent gratis to all.

JAMES J. H. GREGORY,
Marblehead, Massachusetts.

NEW TOMATOES.

Tilden's New Seedling. Large, well shaped, very rich color, remarkably productive, of excellent quality, and keeps well for market purposes.

Cook's Favorite. Large, apple shaped, very vigorous and productive. Raised by the acre, it brought nearly double the price of other sorts in Boston market this season.

Mammoth Chihuahua. Size enormous, weight 2 to 3 lbs. each, one of the largest will weigh a quart measure! Quality excellent.

Mexican Tomato. This is a large, round variety of Lester's Perfected. They are as large and as uniformly round as Cook's Favorite, and are prodigious bearers.

Early York. Very early; mostly of a flat round shape, of good market size, of excellent quality and very productive.

Tomato de Lave. The French upright or bush tomato. This variety is entirely distinct and will bear planting eighteen inches apart.

Bates' Extra Early. A remarkably early round variety, of good quality and of good market size.

Either of the above varieties will be forwarded post-paid by me at 15 cts. a package, and warranted to reach the purchaser.

JAMES J. H. GREGORY,

Marblehead, Massachusetts.

My Onion Seed.

What they Say of It!

"Des Moines, Iowa, Oct. 1895.
Mr. J. J. H. Gregory,—Dear Sir,—I feel it my duty to return you my sincere thanks for the good and genuine seed of different kinds I bought of you. There was considerably over one hundred dollars worth, all true to name, and excellent. The Onion Seed was the best I ever bought, and I have had a good deal of experience with different seedmen. Some of my Danvers Onions measured sixteen inches in circumference."
ROBERT GIBSON.

Mr. Israel Whitcomb, of Hingham, Mass., writes: "I bought seed of you last season, and am satisfied. I think I shall harvest from 1200 to 2000 bushels, and I have not seen one scallion as yet."

I have grown a fine lot of Early Round Yellow Danvers, (this yields enormous crops.) Large Red, Early Red Globe, Yellow Flat or Striped, and Early Cracker Onion Seed. I invite all who want seed that is *reliable in every respect*, to send for my Onion Circular for prices and detailed description of varieties, which I send gratis to all. Why run any risk of losing so valuable a crop through poor seed? I have published a thorough Treatise on Onion Raising of 32 pages, with 13 illustrations, which I send to any address for 30 cents. JAMES J. H. GREGORY, Marblehead, Mass.

CRANBERRY PLANTS.—MORE OF THE same kind, by

DR. B. H. STEVENS, Essex, Conn.

KNOX'S VINES AND PLANTS.

Grapes, Strawberries, Raspberries, Blackberries, Currants, Gooseberries, &c., &c., of every desirable Variety, and best quality.

OUR GRAPE VINES

are propagated from wood, taken from our own bearing vineyards, of twenty one acres, and are so produced as to secure the most healthy and vigorous growth. We are now able to furnish, of the best quality, the following varieties:

Concord, 1, 2, and 3 years old; Delaware, Hartford Prolific, Creveling, Union Village, Cayahoga, Allen's Hybrid, Rebecca, Taylor, Anna, Alvey, Elsinburg, Rogers' Hybrids, Nos. 4, 15 and 19, Martha, Black Hawk, Iona, Israella, Adirondac, &c., &c.

Our stock is large and superior, but the demand promises to exceed the supply.

Send Ten Cents for the

NEW EDITION

OF OUR

Descriptive and Illustrated Catalogue

which gives Select Lists, Prices of Vines, Instructions for preparing the soil, planting, pruning, and much other valuable information, &c., &c.

STRAWBERRIES.

We claim that no one has given the Strawberry more earnest attention than we, and that our collection embraces every variety, worthy of culture.

At the very head of the list we place,

JUCUNDA---OUR NO. 700,

which in point of SIZE, BEAUTY, YIELD, LONG BEARING, SHIPPING QUALITIES, VIGOR OF PLANT, PROFIT, and other desirable qualities, is FAR IN ADVANCE of any other variety, of which we have knowledge. A few acres of it, in the neighborhood of any good market, would be quite a fortune.

Dr. JNO. A. WARDER, says: "It is the most remarkable fruit of its class that has ever come under my observation." A. W. HARRISON, after first seeing it on our grounds, says: "I at once determined to plant no other, and regarded it as the Strawberry of the future, *par excellence*." Mr. B. BATHAM, says: "Could corroborate all that others have said of its great beauty, size, and excellence of flavor." GEO. M. BEELER, says: "I saw great quantities, ten or twelve berries of which filled a pint. * * * Bushels of them sold every day in market, which brought one dollar per quart." THOMAS MEEHAN, says: "But the greatest of all Knox's Strawberries is undoubtedly '700.'" These gentlemen all formed their judgment of this remarkable fruit, from seeing it on our grounds, some of them, for several successive years. We might also give much other similar testimony, from Rev. Jas. Colder, of Harrisburg, Pa., W. H. Loomis, of Indianapolis, Ind., A. Thompson and Geo. W. Campbell, of Delaware, O., S. B. Marshall, Massillon, O., J. R. Miller, Springfield, O., A. B. Buttle, Columbus, O., Dr. B. Edwards, St. Louis, Mo., and many others. For further description of this Strawberry; also of the AGRICULTURIST, FILLMORE, GOLDEN SEED-ED, RUSSELL, GREEN PROLIFIC, GEORGIA MAMMOTH, LADY FINGER, LENNIG'S WHITE, TRIOMPHE DE GAND, WILSON, FRENCH'S SEEDLING, &c., &c., modes of planting, growing, gathering, marketing, and much other valuable information, send 10 cents for our **DESCRIPTIVE and ILLUSTRATED CATALOGUE.**

RASPBERRIES.

We have a large supply of **Hornet, Pilate, Souchet, Improved Black Cap, Philadelphia, Miami, Purple Cane, &c.** Descriptions and Illustrated Select Lists, Prices, &c., contained in

CATALOGUE,

for which send 10 cents.

BLACKBERRIES.

In addition to the valuable old varieties, **Rochelle, Dorchester and Newman**, we can furnish superior plants of **Wilson's Early** and **Kittatinny**. Enclose 10 cents for **CATALOGUE**, containing description, illustrations, Select Lists, Prices, &c.

CURRANTS.

Having given much attention to the selection of a good stock of Currants, we are able to furnish, in any quantity, all the old and new kinds, including **Cherry, White Grape, Versailles, Fertile d'Angers, Fertile de Paillean, Victoria, Black Naples, &c.**

We are constantly receiving very many letters of inquiry, in reference to the culture of **SMALL FRUITS**. The information sought after, is contained in the **NEW EDITION** of our **CATALOGUE**, which will be sent to all applicants enclosing 10 cents.

It is furnished at less than cost, and is worth ten times the amount to all interested in the subjects of which it treats.

J. KNOX,

Box 155, Pittsburgh, Pa.

HENDERSON AND FLEMING'S

VEGETABLE AND FLOWER SEEDS, CROP of 1865.

Most of our Vegetable Seeds have been grown by us. The following are such as are used as the **BEST AND MOST PROFITABLE** sorts in

Our Market Gardens

near Jersey City, where, for nearly twenty years, we have grown to supply the fastidious market of New York.

Beans , (Bush) Valentine, Mohawk, Refugee.....	per quart.	30 cts.
Beans , (Pole) Lima, Selva.....	60 ..	
Beets , Short Top Round, Long Blood.....	per oz.	15 ..
Cabbage , True Wakefield, ½ oz. \$1, Winningstadt.....	50 ..	
Cabbage , (Late) Premium Flat Dutch, Drumhead.....	40 ..	
Carrot , Early Horn, Long Orange.....	15 ..	
Cauliflower , True Dwarf Erfut, ½ oz. \$4, E. Paris.....	\$1 50 ..	
Celery , New Dwarf White, ½ oz. \$1, Giant.....	40 ..	
Corn , Dwarf Prolific, ½ qt. 50 cts., Evergreen.....	per qt.	30 ..
Cucumber , New Jersey Hybrid, ½ oz. 40 cents, Long Green.....	per oz.	30 ..
Egg Plant , New York Improved Purple.....	60 ..	
Lettuce , Curled Simpson, ½ oz. 50 cts., Butter.....	40 ..	
Melon , Citron, Nutmeg, Skillman's.....	20 ..	
Melon , (Water) Ice Cream, Mountain Sprout.....	15 ..	
Okra , Long Green, Dwarf White.....	15 ..	
Onions , White, ½ oz. 30 cts., Red and Yellow.....	20 ..	
Parsley , Extra Curled.....	15 ..	
Parsnip , Long Smooth.....	15 ..	
Peas , (Early) Extra Early Dan'l O'Rourke.....	per qt.	50 ..
Peas , (Late) Champion, British Queen.....	per oz.	50 ..
Pumpkin , Cheese.....	10 ..	
Radish , Scarlet Turnip and Long Scarlet.....	15 ..	
Salsify , or Oyster Plant.....	25 ..	
Spinach , Round and Prickly.....	10 ..	
Squash , (Early) Custard, ½ pkt. 25 cts., Bush.....	10 ..	
Squash , (Late) Turban, per pkt. 25 cts., Hubbard.....	30 ..	
Tomato , Tilden, Powell's Early.....	per pkt.	25 ..
Tomato , Early Smooth Red, Fejee, Valencia.....	per oz.	30 ..
Turnip , White Dutch, Golden Ball.....	10 ..	
Herbs , Thyme, Sage, Marjoram, &c., &c.....	½ pkt.	5 ..

The above sent by mail to any address on receipt of the prices annexed, with the addition of 8 cts. ½ lb. for postage.

Market Gardeners and others ordering in quantity will be supplied on liberal terms.

Novelties in Flower Seeds.

Lobelia Snowflake . As a Bedding Plant it stands unrivaled; plant of dwarf erect habit. The flowers are large, perfectly even, and of the purest white.....	\$1.00
Scarlet Sweet Pea : <i>Invincible</i> . Remarkably fragrant, with bright scarlet crimson flowers, entirely new in color and unusual prolific bloomer.....	\$1.00
Aphelaxis Atrosanguinea . A new everlasting of great beauty; flowers dark crimson, developed in wonderful profusion.....	\$1.00
New White Monthly Pink , Sarah Howard. For description and illustration, See February No. of AGRICULTURIST for 1865.....	\$1.00
Pectus Augustifolia . Height three or four inches, each plant 12 inches across, with foliage, remarkable for its <i>strong citron-like fragrance</i> . Flowers deep yellow.....	\$1.00
Palafoxia Hookeriana . A New Annual, of dwarf branching habit, with bright showy rosy purple blossoms.....	\$1.00
Amaranthus Erectus Superba . A branching variety of compact growth, 1 foot in height, of rich glossy crimson.....	\$1.00
Walizia Aurea . A new everlasting flower of great beauty, with bright golden yellow flowers, one inch in diameter.....	\$1.00
Walizia Corymbosa . Flowers of a light carmine shaded yellow, having the peculiarity when dried of yielding a fragrance similar to ripe strawberries.....	\$1.00
Walizia Grandiflora . Somewhat the color of <i>W. Aurea</i> , but larger and more robust in all its parts, forming a plant of great beauty and elegance.....	\$1.00
Mathiola Bicornis . An evening scented stock, the power of its delicate perfume can be distinctly perceived at a distance of a hundred yards, flowers rosy pink.....	\$1.00
Turner's Premium Florists' Pink . Seeds of this splendid assortment which we know to be from the genuine stock.....	\$1.00
Mimulus Maculatus Striatus . Flowers on yellow grounds beautifully striped—scarlet, crimson, brown, etc.; well adapted for shade borders.....	\$1.00
Wigandia Caracasana . An ornamental foliaged plant of great beauty—attaining a height of 10 feet.....	\$1.00
The entire collection of 14 Novelties for \$10. Free by mail.	

ONE YEAR'S SUPPLY

of

Vegetable Seeds for Private Families,

contains only the most approved sorts, and will be found a great convenience in ordering to such as are not conversant with the different varieties. It is also a saving of 20 per cent. from our regular Catalogue prices. The quantities are arranged to suit the wants of those having large or small Gardens:

Collection No. 1, Sufficient for a Garden of 2 Acres.....	\$50.00
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Collection No. 1, Contains 12 choice Annuals.....	.50
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Grass and Clover Seeds,

Garden Tools and Implements,

Russian Bass and Chinese Grass for tying,

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containing plain and concise instructions of the methods of cultivation now in practice in our own grounds. Now ready, which will be mailed on receipt of ten cents. To our customers of last year it will be mailed free.

HENDERSON & FLEMING,

Seedsmen, Market Gardeners & Florists,

67 Nassau St., cor. of John St.,

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Our present Edition (the 30th) is greatly improved and enlarged to more than 100 pages of small type, and illustrated with upwards of

50 New and Beautiful Engravings,

of the most popular and showy, with a full description of more than 2,500 Flower and Vegetable Seeds, accompanied with full practical directions for the amateur cultivator, is now ready.

The Catalogue now offered to our numerous customers, is one of the most complete ever published, containing all the information necessary for the amateur, for the successful growth of the most beautiful Flowers and Plants. In consequence of the increased cost of paper, and the great expense of publication, we shall make the nominal charge of 25 cents each, and all applicants enclosing that amount will receive the Catalogue.

Address **HOVEY & CO.,**
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In order to introduce our vegetable seeds as extensively as possible, and make it an object for every person who cultivates a vegetable garden to test their merits, we shall continue our former very liberal inducements to purchasers, sending:

20 Varieties for.....\$1.00
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Will be supplied in large quantities at the very lowest wholesale rates, and a new retail catalogue with **Reduced Prices** will be forwarded to all who apply for it.

G. R. GARRETSON, Flushing, N. Y.

CHOICE GARDEN, FIELD AND FLOWER SEEDS,

Farm and Garden Implements,

Guano, Bone Dust, and Fertilizers of every variety, **Plants, Trees and Shrubs.**

For Price List, &c., See February Agriculturist, page 72.
JOHN VANDERBILT, 23 Fulton-st., New York.

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J. M. THORBURN & CO'S

Descriptive Priced Catalogue for 1866,

Mailed to all applicants.

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WILLIAM HACKER,

Office 238 South 3rd street, Philadelphia, Pa.
Importer and Grower of Agricultural and Garden Seeds, Trees, Plants and Bulbs. Also offers a few choice varieties of Imported Oats and Barley, for spring sowing. Country Merchants, Dealers and Druggists supplied at the lowest rates

Onion Seed, Growth of 1865.

Large Red Wethersfield, per lb.....\$2.00
Large Yellow Dutch, per lb.....2.25
Yellow Danvers, true, per lb.....2.50
White Portugal, per lb.....3.75
The above varieties will be sent by mail post-paid, to any address upon receipt of the price. Address **McELWAIN BROS.,** Springfield, Mass.

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Dwarf, New and Choice.
Address **HALSTED BROS. & PUTNAM,**
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BRIDGEMAN'S Annual priced Catalogue of
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Also ready his descriptive priced list of

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Garden and Flower Seeds of our own growing, warranted fresh and genuine. Catalogue with directions for cultivation sent free. Address **BRILL & KUMERLE,**
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FLOWER SEEDS! FLOWER SEEDS!

Our Annual Descriptive Catalogue
OF

FLOWER SEEDS,

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FRENCH HYBRID GLADIOLUS,

and other Spring Bulbs is ready for mailing to all applicants.
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Para, Turban, Hubbard, Yokohama!

As the original introducer of the Hubbard Squash, I am prepared to supply every cultivator with **PURE** seed. The Hubbard is the driest, sweetest and richest of all WINTER squashes, and will keep till April. The Turban is the driest, sweetest and richest of all FALL squashes, and will keep till March. Many of my correspondents are extravagant in their praise of this squash—“Why will people longer raise the coarse, watery summer varieties when they can get such a squash as the Turban!” The Yokohama, a new squash from Japan, has given great satisfaction this season; it is exceedingly fine grained, very sweet, and of a peculiar marrow-like taste. The Para is a bush squash from South America, for fall and winter use; keeping till February. It resembles in quality a very fine crookneck. My seed stock came directly from Para and is **PURE**. All these varieties yield abundantly. Ten tons of Hubbard and eight tons of Turban have been raised to the acre.—Packages of seed of each of these varieties, sent post-paid to any address for 15 cts. Hubbard sent by the lb. for \$2.25. Turban sent by the lb. for \$3.50.
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Sent by mail, post-paid, with my Illustrated Essay on their cultivation. General Descriptive Catalogues of Plants and Seeds now ready, mailed on receipt of 10 cents.
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20,000 strong Bulbs Japan Lily for sale by single bulb, hundred, or thousand.
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3000 Plants, \$10 to \$15 per 100.
Very fine. Warranted true.
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We have the pleasure of offering Seeds of this very valuable variety, raised by us from seeds received of Mr. Tilden, of Iowa, the originator. It has been universally commended by all who have raised it, and it has received the highest premium by our Horticultural Societies. Its great merits are beautiful form, fine color, solid flesh; and an early and very productive sort. It also carries well to market. Packages of seeds 25c. each, and mailed to all who enclose the amount.
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Amateur-Cultivator's Guide to the Flower and Kitchen Garden, is now Ready.

This work is intended as a complete guide to the Amateur-Cultivator, for both Flower and Kitchen Garden, it contains a list of all Flower and Garden Seeds worthy of cultivation; (embracing over 2,000 varieties,) with full and explicit descriptions and directions for cultivation, to which is added a list of all the most important novelties which were flowered for the first time in Europe last season, many of them illustrated. It will also contain a descriptive list of

121 Finest French Hybrid Gladiolus, and other Summer flowering bulbs. Also plans for laying out small grounds in a tasteful manner. This will contain over one hundred pages of closely printed matter, fully illustrated with one beautiful colored plate, and

Over Fifty Engravings.

The whole work is executed in elegant style, and will be forwarded post-paid, upon receipt of Twenty-five cents, to any address. Address

WASBHURN & CO.,
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Sugar Cane Seed.

A large and excellent Stock. Selected with great care. This Seed was examined while growing, and purchased in the head, from fields yielding the best and greatest quantity of Syrup. We warrant its purity and correct nomenclature. Large and Early Sorghum, Librarian Nee-a-za-na sta-his-tan, and all the leading sorts. The Trade supplied at a reasonable discount. Send for Price List, and Illustrated Sorgo Hand Book to accompany “Skinner's” Adjustable Cane Mills, Horse Powers and Evaporators. Address **E. W. SKINNER & CO.,** Madison, Wis.

SUGAR TROUGH GOURD AND LIBERIAN SUGAR CANE SEED by mail, post-paid, at 25 cents per package, each, the two to one address, 40 cents. The Gourd grows to an average size of four gallons, though I have raised many that held over seven gallons. Excellent for Sap Buckets, and for many household purposes.

The **LIBERIAN SUGAR CANE** was recommended by the Ohio Sorgo Convention, as yielding more than twice as much as any other variety.

It Never Falls Down.

I raised from 2 ounces of seed 39 gallons of good, thick syrup. I will send four ounces in a package.
Address plainly, **WALDO F. BROWN, Oxford, Ohio.**



Nansemond Sweet Potatoes for Seed.

Price \$6 per single bushel; \$15 per barrel of 8 bushels. Reasonable discount on large orders. Also plants in proper season. This variety is successfully grown at the North. Send for Circular of Directions, etc.

Murray & Co.,

Forsters Crossings,
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NANSEMOND SEED SWEET POTATOES for sale, of a superior quality. Price low. Discount on large orders.

Also responsible Agents wanted in every good locality, to sprout on shares. Send for Terms, Directions, &c.
Address **ALFRED LEE, Kokomo, Howard Co., Indiana.**

EARLY GOODRICH POTATOES.

J. M. THORBURN & CO., regret to announce to their friends and also the “Trade,” that their Stock of the above is exhausted.—See catalogue for 1866 for all other varieties.
J. M. THORBURN & CO.,
15 John-st., New York.

Seed Potatoes by Mail.

The cheapest and best method to get the best kinds for trial. Single packages last season yielded 3 to 8 bushels. Try a package. It will pay. For Prices see Feb. No., or address **E. WILLIAMS, Montclair, N. J.**

4 lbs. for \$1. **EARLY GOODRICH, CUZCO,** **HARRISON,** and others.
P. SUTTON, Pittston, Luzerne Co., Pa.

10,000 1 and 2 year Cherry Trees.
25,000 Standard and 2000 Dwarf Apple Trees.
100,000 Mahaleb Cherry Stocks.
50,000 Imported Pear Stocks.
Also, Standard and Dwarf Pear Trees, and a general variety of Trees, Vines and Plants, for sale at the Wolf Creek Nursery. Terms Cash. **WAMPLER & TILLOTSON,**
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60,000 APPLE AND CHERRY TREES.
I offer a large stock of Apple and Cherry Trees of the most desirable varieties. Price of Apple Trees, \$100 per M; Cherry \$30 per hundred; \$25 per M. Address **CYRUS N. HEN, Strasburg, Lancaster Co., Pa.**

NATIVE EVERGREENS of the following varieties, 5 to 12 inches high, at \$7 per 1000. *Balsam Fir, Arbor Vitæ, White Pine, Spruce and Hemlock. Packing free. **JAMES A. ROOT,**
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FRUIT AND ORNAMENTAL TREES, Shrubs,
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FRANCIS BRILL, Newark, N. J.

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Fruit, Ornamental Trees and Shrubs in large quantities.

EVERGREENS.—We offer an unusually fine Stock for spring, particularly **Norway Spruce**, 3 to 4 ft.

PEARS—Standards, a few stock of 1st, 2nd, and medium qualities.

We also offer the finest collection and largest assortment of fine and new imported **FLOWER SEEDS**, ever offered in this country.

Parties wishing to purchase in large quantities should avail themselves of our several Catalogues.

Our Nurseries embrace over Three Hundred and fifty acres of Land.

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Catalogue No. 3—Green House, Bedding Plants, Bulbs, Choice Flower Seeds, &c.

Catalogue No. 4—Wholesale and Trade List for spring of 1866.

FROST & CO.

Bloomington Nursery.

240 Acres! 14th Year!

Apple, 1 and 2 year, also 1st class 3 to 5 year Standard Apple; Dwarf Apple; Standard and Dwarf Pear, Plum, Cherry, Hale's Early Peach, Apricot, Mulberries, Currants, Gooseberry, Kittenberry, and other Blackberries, Iona, Israella, Adirondac, with general assortment of Grapes, Apple and Pear Root Grafts, Nursery Stocks, Cions, Cuttings, &c., &c. Osage Orange, fine 1 year, Wholesale and Retail Potatoes—Cuzco, Garnet Chili, Pinkeye Rustycoat, also Calico, Early Goodrich, Gleason, Evergreens, very large stock, mostly medium and small sizes. Ornamental Trees and Shrubs, Roses, the very largest and best assortment we know of, over 600 varieties. Dahlias, Lilies, Gladioli, Tuberoses, Peonies. Green-House and Bedding Plants.—Having Eight large Houses we can furnish a Splendid Floral Collection. Send 2 Red Stamps for Catalogues. Address

F. K. PHENIX,
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GENEVA NURSERY,

GENEVA, N. Y.

Large stock of Standard and Dwarf Pears, and general assortment of Standard and Dwarf Trees, including the Smaller Fruits.

Grape Vines.

Iona, Adirondac, by the dozen, 100, or 1000. Also, Concord, Creveling, Catawba, Delaware, Diana, Israella, Hartford Prolific, and other well approved sorts.

Strawberry Plants.

Agriculturist by the 100 or 1000. Russell's Great Prolific, Buffalo Seedling, Triomphe de Gand, Wilson's Albany.

Ornamental.

Norway Spruce, Balsam Fir, Hemlock, Spruce, 3 to 4 feet, Horse Chestnut and Mountain Ash, 3 feet, and other Ornamental Trees and Green-House Plants.

Seedlings of Pear, Quince, Mahaleb, Cuttings of Grape, Quince, Cornwell Willows. Send for Wholesale Catalogue. W. & T. SMITH, Geneva, N. Y.

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Two and 3 year old Concord grape vines, 1 to 3 year Rogers' Hybrid vines, 40 other kinds. Native grapes, popular and new sorts. Nearly all grown in open ground. (The *Dracut Amber grape* for 12 years has proved the earliest and most successful of any grape in my collection, ripe August 25th.) 30 kinds Strawberry plants, 20 kinds Currants, Large and Small Fruits generally, Shade Trees and Shrubs, 100,000 Evergreen Trees in variety. Send for Illustrated Priced Catalogue. J. W. MANNING, Reading, Mass.

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The Subscriber, desirous of thinning out his extensive Pear Orchards, offers for sale at one half the usual prices, over two thousand choice Dwarf and Standard Pear Trees of the Bartlett, Louise Bonne de Jersey, and Duchess d'Angouleme varieties, from three to seven years old, and in full bearing condition. Parties desirous of purchasing can give the trees a personal inspection. Orders by mail will be promptly attended to.

WILLIAM Y. BEACH, Wallingford,
New-Haven Co., Conn.

Red Cedar Seedlings.

Shelter for an Orchard, and Dumb Brutes, adornment for our homes. I can furnish this Spring one million plants of Red Cedar, viz:

3 to 6 inches high, \$5 per 1000; 6 to 10 inches high, \$10 per 1000. Early orders and correspondence solicited.

Address JOHN-M. HUNTER, Ashley, Washington Co., Ill.

The Wilson Early Blackberry.

STRAWBERRIES and RASPBERRIES. No. 1 plants. All wanting such for garden or field culture will do well to send and get a Descriptive and Price List to which there is no variety recommended that I do not cultivate by the acre. Small lots mailed free. Stamp not required.

JOHN S. COLLINS, Moorestown, N. J.

Philadelphia Raspberry.

Two strong plants, \$1; 12 plants, \$4; by mail. Agriculturist Strawberry, 12 plants, \$1.25; 100 plants, \$5. Also, **GRAPE VINES**, for sale by

THOS. S. FLETCHER, DELANCO,
Burlington Co., N. J.

SAGE ORANGE PLANTS.—Extra good one year old, \$10.00 per thousand. Extra 2 year old, \$12.50 per thousand. LUKE'S PEIRCE, Ercildou P. O., Chester County, Pa.

SMALL FRUITS

AT LOW RATES.

We will send out strong, well rooted plants packed so as to go to Maine or Kansas, safely. **Charges pre-paid.**

STRAWBERRIES.—Following varieties: Jenny Lind, Downer's Prolific—both very early and indispensable. Wilson's, Hooker, Chillian and Crimson Cone, 20 cents per dozen, \$1 per 100. Fillmore, (very fine and delicious), Shaker, Bartlett, Peabody, Russell (one of the best), Wizard of the North, Buffalo, Cutter, Scarlet Magnate, Ward's Favorite, and French—the last, undoubtedly one of the finest and most profitable early sorts grown, on account of yielding the bulk of its fine, beautiful berry so early. 30 cents per dozen; \$2 per 100. **Green Prolific.**—We agree with Francis Brill, of New Jersey, who says of this variety: "This we place first on the list of tried varieties. Its originator, Seth Boyden, places it for general cultivation, above his famous 'AGRICULTURIST,' and so do we. We do not claim this as a perfect Strawberry, for such does not exist, but we do say, it possesses a greater combination of good qualities than any other before the public." Plants that we set last spring have formed the most enormous and astonishing "stools" that we ever saw, and the same produced more fruit last season than the Wilson's Albany set the August before, 50 cents per dozen; \$3 per 100. **Agriculturist**, \$1 per dozen; \$5 per 100. This is a late sort, of the White, and New Jersey Scarlet, \$1 per dozen. **Jucunda**, or Knox's "700," \$3 per dozen.

RASPBERRIES.—Doolittle's Black Cap, Double the size and yield of the common Black, \$1 per doz.; \$4 per 100. **Niama Black Cap.**—Equal to the last in every respect, but 2 weeks later, \$1 per dozen; \$4 per 100. **GOLDEN CAP.**—Same as the last, except of a beautiful golden color, \$2 per dozen; \$12 per 100. **Purple Cape.**—Undoubtedly the most common bearing Raspberry grown—the strong, stocky bushes hanging literally loaded with fruit of a purplish, red color, and having the delicious flavor of the wild Red Raspberry, we do most emphatically pronounce it the best and most productive Raspberry grown to our knowledge, \$1 per doz.; \$5 per 100. **CATAWISSA.**—The best "everbearing" sort we know of. It yields a heavy continuous crop of large, delicious, purplish, red fruit, late in the season, for a number of weeks, when no other small fruits are to be had, thereby making it indispensable for table use, \$2 per dozen; \$12 per 100.

None of the above send up "sneakers," but all are increased by layering the tips of the new growth, and neither has ever winter-killed with us, notwithstanding the thermometer has stood 30 degrees below zero.

BLACKBERRIES.—New Rochelle or Lawton, rows containing 40 plants have yielded 6 to 8 bushels of fruit with us, \$1 per dozen; \$4 per 100. **Dorchester High Bush**, fruit delicious, long, glossy black, yields heavy crops early, and gone by the time the "Lawton" gets fairly to bearing, \$1 per doz.; \$5 per 100.

CURRANTS.—Cherry, the largest and finest red sort, \$2 per dozen. White Grape.—The finest and most productive White sort, \$2 per dozen. Houghton Seedling Gooseberry—Never muddies, \$1 per dozen.

GRAPES.—All strong roots and true to name.—Concord and Hartford Prolific, 40 cents each, \$3.50 per dozen. Diana and Delaware, 50 cents each, \$5 per dozen. Iona, Israella, and Adirondac, \$2 each, 1 of each for \$5.

CRANBERRY PLANTS, 50 cents per 100; \$4 per 1,000; 10,000 for \$30.

Sweet Potato Plants in their season at low rates. Send for my "DESCRIPTIVE CATALOGUE."—It gives instructions for garden and field culture—also for gathering and marketing the fruit. If you wish to plant largely or to buy to sell again, send for my "WHOLESALE LIST." Stamps not refused. Remember that I *prepay charges on all cash orders*, and that not less than 6 of each sort will be sent at the dozen rate, or less than 50 of each sort at the 100 rate. Remittances can be made by mail in National Currency, Post Office Orders, or Drafts on New York, or Chicago.

Address A. M. PURDY, South Bend, Indiana.

KIT-TA-TIN-NY—Its Chief Points are:

1. Very largest size.
2. Enormous productiveness.
3. Most delicious flavor.
4. Uniform ripening.
5. No hard core like Lawton.
6. Sweet enough without sugar.
7. Retains color after picking.
8. Earlier than New Rochelle.
9. Fit for Market when Ripe.
10. Very hardy, has never winter-killed.

11. Tested by 3 to ten years trial.
12. Admitted the Best Blackberry known by the highest authority, viz: Chas. Downing, Wm. S. Carpenter, Peter B. Meade, Editors Agriculturist, and every one who has tasted it. My 2-year old plants will furnish berries of medium size this season, if carefully transplanted and attended to.

Order early to prevent disappointment. 1-year plants by mail, \$1.50 each; p. doz. \$12, by exp. less. For Testimonials, &c., address E. WILLIAMS, Montclair, N. J.

Address A. M. PURDY, South Bend, Indiana.

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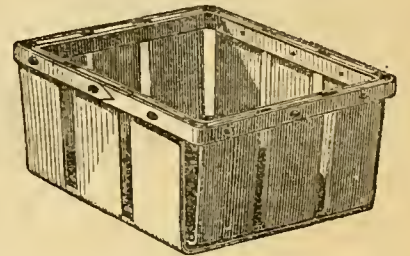
Address A. M. PURDY, South Bend, Indiana.

Adirondac Grape Nursery and Vineyard.

Wholesale and retail. We can furnish superior Vines in large quantities to the trade of the following: Adirondac, Allen's Hybrid, Concord, Creveling, Cayuga, Delaware, Diana, Hartford Prolific, Iona, Israella, Maxatany, Miles, Northern Muscadine, Rebecca, Rogers' Hybrids, Sherman and Union Village. Also the best Foreign Varieties, carefully packed and forwarded by Express, or by Mail, pre-paid. Send for Descriptive and Priced Catalogue.

Feb. 1st, 1866. JOHN W. BAILEY & CO.,
Plattsburgh, N. Y.

THE AMERICAN FRUIT BASKET!



This favorite Fruit Basket for Strawberries, &c., is receiving the highest commendation from every quarter, and is called by many of our best Fruit Growers and Fruit Dealers, the only perfect article of the kind now in use. It is constructed so as to equalize the weight of the fruit—can be packed in less space—and when filled with fruit is exceedingly attractive in appearance.

Having the advantage of superior machinery, the Baskets are sold at a less price than any first class Basket now in market.

AMERICAN BASKET CO.,

Office No. 313 Chapel-st.,

New-Haven, Conn.

VEENER FRUIT BASKETS.

Beecher's Patent May 31st, 1864.

These Baskets are thoroughly ventilated, and when packed in Crates, are warranted to transport safely to all markets, Strawberries, Raspberries, Blackberries, and all other small fruits that are marketable.

For style, convenience in picking and handling, and for profit to Fruit Growers and Commission dealers, they have no equal.

The First Prize was awarded these Baskets at the Horticultural Exhibition of the American Institute, held at Cooper Union, last season; and recommendations from many of our most prominent and successful fruit men throughout the country endorse this decision.

Baskets and Crates can be had of W. H. Carpenter, 90 Vesey-st., N. Y.; C. B. Rogers, 133 Market-st., Philadelphia; Richard Cromwell, 45 & 48 Light-st., Baltimore; and by dealers generally throughout Town and Country.

Manufactured only by

A. BEECHER & SONS,

Westville, Conn.

By whom Circulars will be sent on application with stamp.

NEW STRAWBERRIES.

Great Agriculturist, the largest berry known, 12 berries have been produced that weighed one pound, plants \$1 per dozen; \$3 for fifty; \$5 per hundred, also by the 1000 or 5000, at less rates. Ida, a New Seedling, more productive than Wilson, \$3 per dozen; or \$10 per hundred. Green Prolific, a very large kind, \$1 per dozen; \$3 per hundred; \$15 per thousand. Buffalo, \$1 per dozen; \$2.50 per hundred; \$15 per thousand. French's Seedling, the best early berry, very large, \$1.50 per hundred; \$10 per thousand. Russell's Prolific, a great market berry, \$1.50 per hundred; \$10 per thousand. Lennie's White, a splendid large white berry, \$1 per dozen; \$3 per hundred. Great Austin, \$1.50 per hundred; \$10 per thousand. Monitor, Col. Ellsworth, and Brooklyn Scarlet, are the three Tribune Prize Berries, for which \$3000 was paid, these should be in every good collection, plants \$1.00 per dozen; \$3.00 per hundred; \$15 per thousand. Mead's Seedling, a magnificent new seedling, berries six inches in circumference, \$3 per dozen; \$30 per hundred; \$150 per thousand. 12 New kinds from France and Belgium, all very large, some of them monstrous, \$1 per doz. the 10 varieties, \$10. Address — WM. S. CARPENTER, 136 Read-st., New-York.

Strawberry Plants.

400,000 Strong and well rooted Russell's Prolific and French's Seedling Plants, for sale, Russell's at \$1.00 per hundred; French's at 70 cents per hundred; 10 per cent. discount of 1000 plants; 20 per cent. discount of 5000 plants. Delivered at James Slip, New-York, without additional charge, or sent by mail and postage paid at 50 cents extra.

SAMUEL HICKS, North Hempstead, (L. I.) N. Y.

Strawberry Plants for Sale.

Downer's Prolific, French's Seedling, Cutter's Seedling, each \$4 per 1000. Other excellent varieties at different prices. Liberal discount on large Orders. Price List sent free on application. SAM'L C. DECOUR, Rockledge, Burlington Co., N. J.

Agriculturist Strawberry.

For sale at \$1.50 per 100 plants; \$1.00 per dozen, by mail.

EDWARD MERRITT, Poughkeepsie, N. Y.

STRAWBERRY PLANTS.

Agriculturist, \$1 per hundred; \$30 per thousand. Green Prolific, Buffalo, Russell's, \$1.50 per hundred; \$10 per thousand. French's Seedling, Downer's Prolific, \$1 per hundred; \$5 per thousand. Price List gratis.

JOHN CRANE, Union, Union Co., N. J.

Rogers' Hybrid Grapes.

Purchasers wanting the above true to numbers, can rely on getting the following genuine, by sending to the subscriber.

Nos. 1, 9, 15, 19, 33, two years old.

Nos. 1, 3, 4, 15, 19, 41, 43, one year old.

Vines two years old, \$1.50 each; \$15 per dozen.

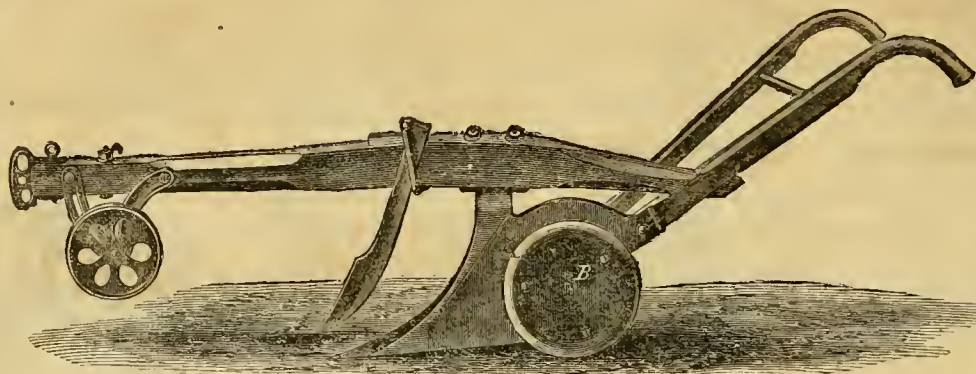
Vines one year, \$1 each; \$10 per dozen; \$50 per hundred.

Also a few hundred strong 2 year old Creveling, \$1.50 each.

EDWARD S. ROGERS, Salem, Mass.

The Olmstead Revolving Landside and Adjustable Mould - Board

The most perfect
Agricultural Imple-
ment ever invented.
It has taken **First**
Premiums at the
State Fairs of both
New York and Penn-
sylvania, for 1865—
and at **all** the Coun-
ty Fairs at which it
has been Exhibited—
over Twenty.



We can safely
Guarantee it to
save from **20 to 40**
per cent. in Draft
over **any Plow** in
the United States—
to be **equally du-**
rable, and to do
Better Work.—
It will more than
save its cost the first
season of using it.

ITS GREAT POINTS ARE:

1st. It saves largely in friction both on bottom and side.—**2nd.** It is held easier by the plowman—saving human as well as brute labor.

3d. A child can move it from place to place, in the Barn or Shed.

4th. A shoe is not necessary in running it from field to field.

5th. It is perfectly simple—having no cumbersome machinery—and by a simple movement of the Mould-board (accomplished by turning a single nut), it can be adjusted to do any kind of work, with either a fast or a slow team.

We also Manufacture the

Revolving Landside Plows

with Stationary Mould-board, more suitable for Heavier Work.

Our **PLOW** does its work so much easier than other Plows, that a man and team can accomplish **much more** in a day. A saving of say only 20 per cent. In Six months plowing, will amount to at least **\$75**—and we can safely **Guarantee** to do more than this.



Circulars with full particulars will be sent by mail. Our Plows can be obtained of R. H. ALLEN & CO., 189 Water-st., New York; GRIFFING & CO., 58 & 60 Courtlandt-st., New York; J. VANDERBILT, 23 Fulton-st., New York. **AYRES, VERPLANCK & CO., Binghamton, N. Y.**

BUY THE BEST!



Awarded the Highest Premium, Grand Gold Medal, by the American Institute, at the Great Field Trial in July, 1865, of which the American Agriculturist says:

"We were present at the trial, and hesitate not to say that we never knew or heard of Mowers being put to so severe and fair tests."

Among the great number of First Premiums awarded to the **BUCKEYE** during the season of 1865, may also be mentioned the following prominent State Agricultural Societies.

Ohio, Kentucky, Michigan, Pennsylvania, Missouri, Vermont, New England, and the Massachusetts Charitable Mechanics' Association.

Farmers who wish to secure the

BEST MACHINE,

should send in their orders at once, and avoid the delay and disappointment they may meet if they wait until the time for using Machines, when the Manufacturers are greatly overcrowded with orders.

Circulars with [Prices, forwarded on application, by Mail, or otherwise.

ADRIANCE, PLATT & CO.,

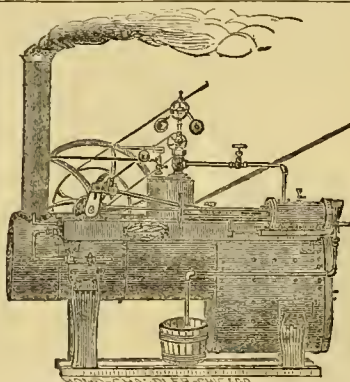
Manufacturers and Proprietors.

MANUFACTORY—Po'keepsie,

OFFICE AND WAREHOUSE,

165 Greenwich-st.,

(near Courtlandt-st.,) New York.



A. N. WOOD & CO.,
EATON, MADISON CO., N. Y.,

Continue to manufacture their Improved

PORTABLE ENGINES,

For Farm and Mechanical purposes. They are particularly adapted to driving Threshing Machines, Circular Saws, Mills of all kinds, Printing Presses, Wood or Iron Lathes, Machinery in Cabinet or Wagon Shops, Boring Artesian Wells, Pumping Water, Corn Shellers, &c., &c.

We warrant our Engines to be what we represent them, and to give unqualified satisfaction in all respects.

A. N. WOOD & CO.

Halsted's Patent Horse Hay Fork.

IMPROVED FOR 1866.

Halsted's Hay Fork Attachment.

IMPROVED FOR 1866.

Furnished entire or in parts. With instructions for putting up. Dealers Supplied, Agents Wanted.

A. M. HALSTED, 68 Pearl-st., New York.

HORSE RAKE WIRE

Of best quality and lowest rates, for sale by

JOHN W. QUINCY,
98 William-st., New York.

ROE'S PREMIUM IMPROVED CHEESE VAT.
The best in the world. Factory Vats, Presses, Screws, Hoops, Curd Cutters, &c., &c. Send for Circular. **M. A. ROE,**
H. A. ROE, 1866.

FOUND AT LAST.

RAYMOND'S PATENT HAY AND STRAW ELEVATOR will work successfully in every substance which the farmer ordinarily handles with a fork. All kinds of Hay, Salt Marsh included, Straw, Loose Grain, Headed Wheat and Even Chaff, Sorghum Refuse, Straw Manure, &c. It is double, opens four feet in width, grasps its burden, scatters little, and in discharging the substance is left loose and not bound together, and is easily removed with a hand fork.

The arrangement of pulleys and rope is such that it travels out and in between the load to be moved and the rear of the mow or stack, and at the same time one horse will operate it where two would be required to elevate the same weight with any other Horse Fork. It is used to carry from Stack to Threshing Machine, also to take up the straw again for stacking. It is valuable where hay is pressed, in unloading and carrying to press. It can be applied to a variety of uses and is capable of being of more service to the farmer than any other implement designed for a similar purpose.

A dealer wanted in every county or town, to whom exclusive rights of sale will be granted on favorable terms. Liberal discounts to dealers and purchasers in clubs.

Send for Price List and Illustrated Circular.

CHAPMAN, HAWLEY & CO., Utica, N. Y.

INGERSOLL'S IMPROVED HORSE AND HAND POWER HAY AND COTTON PRESSES.

These machines have been tested in the most thorough manner throughout this and foreign countries to the number of over 3000.

The Horse Power is worked by either wheel or capstan, and in many respects possesses unequalled advantages. We invite those wanting such machines to write for a catalogue containing full information with cuts, prices, &c., or call and examine personally.

Orders promptly attended to, by addressing
INGERSOLL & DOUGHERTY, Greenpoint, Kings Co., L. I.

Agricultural Implements.

Agents Wanted to sell a number of Patented Implements, Union Mowing Machines, Clement's Horse Forks, Eureka Hay Cutters, Shure's Harrow, Cultivator, Whitecomb's Rake, Patent Hay Stacker, Hickock's New Potato Digger, &c., &c., &c.

Fertilizers, Seeds, Trees, Plants, Agriculturist Strawberry, &c., &c. Send for a Circular to
BENJ. HAINES, 27 Courtlandt-st., New York.

Corn Planting! Time Saved.

Every Farmer should have one or more of **THOMAS B. MCCONAUGHEY'S** Patent Corn Droppers. They will positively save one half the time over the old way of dropping Corn. Droppers will be sent any where by Express for \$2 apiece. Agents wanted everywhere.

Address orders to **THOS. B. MCCONAUGHEY,**
Newark, Delaware.

Millstone Dressing Diamonds

Set in Patent Protector and Guide. For sale by **JOHN DICKENSON,** Patentee and Sole Manufacturer, and Importer of Diamonds for all Mechanical purposes. Also Manufacturer of Glaziers' Diamonds, No. 61 Nassau-st., New York City. Old Diamonds reset. N. B.—Send postage stamp for Descriptive Circular of the Diamond Dresser.

The American Cow Milker,



Under the Patent of March 28th, 1863.
A COMPLETE SUCCESS.
An Agent wanted in every county. A personal interview preferred. Send stamp for Descriptive Circular.
Price \$12. Address L. O. COLVIN, 335 Broadway, N. Y.

Fairchild's Patent Corn and Pumpkin Seed Planter.

This machine is a perfect success, and should not be judged by others, that have failed to give satisfaction. It plants corn and pumpkin seed, both at the same time if desired, or either separately, and will also plant beans, doing its work evenly as though by hand, and leaving the seed covered. It can be altered to plant more, or less seed in a hill, as may be desired, and will do the work of three or four men. Being made of Iron and Steel, it is very durable, and will work in stony soil without receiving injury. It will not clog, or get out of order, and is free from the objections of other machines, of which any one will be satisfied on examination. No farmer can afford to do without it; as it saves three-fourths the labor of planting; and the use of it for one season will more than repay its cost. It weighs 6½ pounds, and costs but \$8, if purchased directly of the makers.

Fairchild's Patent Corn and Pumpkin Planter.

This machine originated in Brooklyn, Pa. It has been used by the farmers in that town several years; and in the following is what they think of it:

TO ALL WHOM IT MAY CONCERN—This is to certify, that the undersigned have used H. C. Fairchild's Patent Corn and Pumpkin Seed Planter from one to three years, and do not hesitate in saying that it is the best hand Machine in use, both in the evenness of seeding, and the completeness of covering on all kinds of land. A good hand with one of these Machines is able to do the work of three or four men with a hoe.

S. B. Eldridge, C. Rodgers, L. M. Baldwin, W. H. Eldridge, F. L. Lindsey, R. F. Breed, Wm. Cronen, C. F. Pringle, J. C. Morgan, O. A. Eldridge, S. S. Sterling, Geo. G. Sterling, A. E. Tewksbury, J. Van Auker, Geo. J. Kent, H. S. Bailey, E. S. Tewksbury, Z. Coy, A. G. Hollister, O. Bailey, A. B. Gere, E. S. Kent, A. Rogers, A. Packer, Wm. J. Chase, N. G. Birch, J. W. Tiffany, R. Du Bois, J. H. Jones, I. W. Adams, Geo. J. Giles, L. Bailey, J. Du Bois, J. T. Van Auker, Lyman Ely, E. Adams, J. W. Adams, I. R. Bailey, J. C. Lee, R. O. Watrous, H. Perigo, M. Perigo, J. C. Peckham, O. C. Ely, Benj. Lindsey, H. W. Kent, J. A. Bailey.

I hereby certify that the above named persons are residents of Brooklyn, and are reliable as to the success of my planter and soil.

G. B. ROGERS, Justice of the Peace.

Dated at Brooklyn, Sept. 1, 1865.

Susquehanna County, N.Y.
Horace Spafford, a resident of Montrose, in said County, being duly sworn, says: I am acquainted with the "Fairchild Corn Planter," so called, and have used the same for two years last past, and I consider it one of the greatest improvements of the age. From my experience with said Planter, I believe it capable of planting all kinds of ground in a complete and perfect manner. A man can plant at least three times as much ground when it is stony and rough as he could without the Planter, by the use of the Hoe, and in good ground free from stone one hand can plant four acres or more in a day. It also plants pumpkin seeds equally well and at the same time. Beans may also be planted with it.

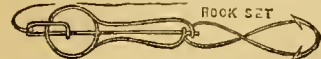
HORACE SPAFFORD.

Sworn before me this 2d day of Sept., 1865.

G. B. ELDRED, Prot.

Price of the machine, \$8. Agents wanted everywhere to sell it. Agricultural Warehouses supplied.

PORTER DE LONG & CO., Binghamton, N.Y., or, VAN NOSTRAND & LYON, 119 Nassau-st., New York.



PATENT "SNAP & CATCH-EM" FISH HOOK.—A perfect trap springs open in the fish's mouth. Sportsmen and Boys all want them. More Agents wanted. Send 30 cents and stamp for two sample Hooks, Terms and Trade Prices to JOSEPH BRIGGS, 335 Broadway, New York.

Patent Animal Fetters.

Just what every farmer needs, light, strong and durable, easily put on and off. Sold by dealers in Farmers' Hardware. Price \$2.00. JOSEPH BRIGGS, Proprietor, 335 Broadway, New York.

DRAINAGE AND LANDSCAPE.

We make surveys, plans and estimates for the drainage and improvement of farms, country seats, parks, estates, &c.; also, take charge of and superintend the work in all its branches.

CHICKERING & CO.,
Drainage, Landscape and Civil Engineers,
No. 18 Wall-st., New York.

\$150 A MONTH MADE BY DISCHARGED
Soldiers and others, with Steel Tools. Don't fail to send for our free Catalogue, containing full particulars. Address
S. M. SPENCER,
Bristolboro, Vt.

For Sale.

An elegant situation for a gentleman's residence, 104 acres of land on the west bank of Seneca Lake—one mile south of Geneva—equally well adapted by soil, and exposure for raising fruit of all kinds—or for a nursery. Surface undulating, slope S. E. Sheltered on the N. W. by a grove of young timber. 150 to 200 scattering native Forest Trees. Well watered. Commanding a view of 30 miles or more of the finest sheet of water in Western N. Y. No buildings, except a 20x40 barn. Apply to S. H. HILL, Geneva, Ontario Co., N. Y.

FOR SALE AT GREAT SACRIFICE
To close an Estate, a Farm of 93 acres, near the R. R., 20 miles south of Philadelphia, 60 acres under fence, balance timber, dwelling house and barn. Price \$3,000, \$1,600 cash, balance in 10 years.
J. H. COFFIN & CO.,
Franklinville, N. J.



BEST FARMING LANDS in the WORLD

FOR SALE BY THE

ILLINOIS CENTRAL RAILROAD CO.,

In Tracts to suit Purchasers, AT LOW PRICES.

THE ILLINOIS CENTRAL RAILROAD COMPANY HAVE FOR SALE,
900,000 ACRES of the best Farming Lands in the Country.

The road extends from Dunleith, in the north-western part of the State, to Cairo, in the extreme southern part, with a branch from Centralia, one hundred and thirteen miles north of Cairo, to Chicago, on the shore of Lake Michigan—altogether a length of 704 miles—and the land which is offered for sale is situated upon either side of the track, in no instance at a greater distance than fifteen miles.

State of Illinois.

The rapid development of Illinois, its steady increase in population and wealth, and its capacity to produce cheap food, are matters for wonder and admiration. The United States Commissioner of Agriculture estimates the amounts of the principal crops of 1864, for the whole country, as follows: Indian corn, 530,581,403 bushels; wheat, 160,695,823 bushels; oats, 176,690,064 bushels; of which the farms of Illinois yielded 138,356,135 bushels of Indian corn; 33,371,173 bushels of wheat; and 24,273,751 bushels of oats—in reality more than one-fourth of the corn, more than one-fifth of the wheat, and almost one-seventh of the oats produced in all the United States.

Grain—Stock Raising.

Pre-eminently the first in the list of grain-exporting States, Illinois is also the great cattle State of the Union. Its fertile prairies are well adapted by nature to the raising of cattle, sheep, horses and mules; and in the important interest of pork packing, it is far in advance of every other State. The seeding of these prairie lands to tame grasses for pasturage or hay, offers to farmers with capital the most profitable results. The hay crop of Illinois in 1864 is estimated at 2,166,725 tons, which is more than half a million tons larger than the crop of any other State, excepting only New York.

Inducements to Settlers.

The attention of persons, whose limited means forbid the purchase of a homestead in the older States, is particularly invited to these lands. Within ten years the Illinois Central Railroad Company has sold 1,400,000 acres, to more than 20,000 actual settlers; and during the last year 264,422 acres—a larger aggregate of sales than in any one year since the opening of the road. The farms are sold in tracts of forty or eighty acres, suited to the settler with limited capital, or in larger tracts, as may be required by the capitalist and stock raiser. The soil is of unsurpassed fertility; the climate is healthy; taxes are low; churches and schools are becoming abundant throughout the length and breadth of the State; and communication with all the great markets is made easy through railroads, canals and rivers.

PRICES AND TERMS OF PAYMENT.

The price of lands varies from \$9 to \$15 and upwards per acre, and they are sold on short credit, or for cash. A deduction of ten per cent. from the short credit price is made to those who buy for cash.

EXAMPLE:

Forty acres at \$10 per acre, on credit; the principal one-quarter cash down—balance one, two and three years, at six per cent. interest, in advance, each year.

	INTEREST.	PRINCIPAL.	Payment in two years.....	INTEREST.	PRINCIPAL.
Cash Payment.....	\$19 00	\$100 00	three years.....	\$6 00	100 00
Payment in one year.....	12 00	100 00			100 00

The Same Land may be Purchased for \$260 Cash.

Full information on all points, together with maps, showing the exact location of Lands, will be furnished on application, in person or by letter, to

LAND COMMISSIONER, Illinois Central R. R. Co., Chicago, Illinois.

VINELAND

FARM AND FRUIT LANDS, in a mild and healthful climate. Thirty miles south of Philadelphia by Railroad, in New Jersey, on the same line of latitude as Baltimore, Md.

The soil is rich and productive, varying from a clay to a sandy loam, suitable for Wheat, Grass, Corn, Tobacco, Fruits and Vegetables. This is a great fruit country. Five hundred Vineyards and Orchards have been planted out by experienced fruit growers. Grapes, Peaches, Pears, &c., produce immense profits. Vineland is already one of the most beautiful places in the United States. The entire territory, consisting of forty-five square miles of land, is laid out upon a general system of improvements. The land is only sold to actual settlers with provision for public adornment. The place on account of its great beauty as well as other advantages has become the resort of people of taste. It has increased five thousand people within the past three years. Churches, Stores, Schools, Academies, Societies of Art and Learning, and other elements of refinement and culture have been introduced. Hundreds of people are constantly settling. Several hundred houses are being constructed, and it is estimated that five hundred will be built during the summer. Price of Farm land, twenty acre lots and upward, \$25 per acre. Five and ten acre, and Village lots for sale.

Fruits and Vegetables ripen earlier in this district than in any other locality north of Norfolk, Va. Improved places for sale.

Openings for all kinds of business, Lumber Yards, Manufacturing, Foundries, Stores, and the like.

For persons who desire mild winters, a healthful climate,

and a good soil, in a country beautifully improved, abounding in fruits and possessing all other social privileges, in the heart of civilization, it is worthy of a visit.

Letters answered and the Vineland Rural, a paper giving full information, and containing Reports of Solon Robinson, sent to applicants.

Address CHAS. K. LANDIS, Vineland P. O., Landis Township, New Jersey.

From Report of Solon Robinson, Agricultural Editor of The Tribune: It is one of the most extensive fertile tracts, in an almost level position and suitable condition for pleasant farming that we know of, this side of the Western Prairies.

SUPERIOR FARM LAND.—20,000

Acres, Franklin Tract, at Newfield, Gloucester County, New Jersey, on the Railroad running from Philadelphia to Cape May, 30 miles South of Philadelphia—adjoining the Vineland Tract, and 2 miles North of the Vineland Station—for sale at low prices and on easy terms, in lots to suit purchasers. Circulars, with reports of Solon Robinson, Hon. William Parry, and others, with full information, sent to applicants, free. Address JOHN H. COFFIN & CO., Newfield, Gloucester Co., N. J. Improved Farms also for Sale.

600 Maryland and Virginia Farms and Timbered Lands.

Catalogue of Maryland and Virginia Lands, with Geographical description of Maryland, for sale by R. W. TEMPLEMAN & CO., Land Agents, 37 Lexington-st., Baltimore City, embracing a description of the soil and products of Maryland. Send 25 cents for a copy of Catalogue.

HALSTED BROS & PUTNAM

68
Pearl-Street,
NEW-YORK.

Produce Commission Merchants.

FOR THE SALE OF

BUTTER, CHEESE, LARD, EGGS, PORK, LAMBS, HOPS, APPLES, DRIED FRUITS, WOOL, BEANS, SEEDS, PLUM, HONEY, GAME, &c., &c.

Send for WEEKLY PRICE CURRENT, Marking Plate and Circular with Packing and Shipping directions. Country Consignments receive special attention.

REFERENCES:

Benj. Loder, Esq., N. Y.
Ex-Prest, Erie R. R.
Cragin & Co., N. Y.
and Chicago, Ill.
King & Scott, Chicago, Ill.
Hon. J. K. Porter,
Albany, N. Y.
Wm. S. Thorne, Esq., N. Y.
Prest, Nat'l Fire Ins. Co.
Lane, Son & Co., N. Y.
E. D. Hungerford, Burlington, Vt.

Cross Cut or Drag Sawing Machine,

Manufactured by

G. WESTINGHOUSE & CO., Schenectady, N. Y.

The Subscribers are manufacturing a superior Cross Cut or Drag Sawing Machine, and invite the attention of those having large quantities of wood to cut, to it. It has several important improvements over the ordinary machines of this kind, some of which are as follows, viz:

The Saw always runs on a line with the center of the crank wheel, and can therefore be run rapidly without bounding.

The Saw can be raised instantly after finishing a cut, by means of a lever, without stopping the machine, and the same lever can be made to counterbalance the saw arm and thus regulate the cut of the saw in different sized logs.

It has the simplest and best arrangement for drawing the log forward, in use. By simply stepping upon a lever, the log is drawn forward after each cut, without loss of time.

The labor of one man is saved by the perfect arrangement of our machine.

They may be driven by the ordinary Two Horse Railway Powers, or 8 to 4 Horse Lever Powers, and good operators will saw 3 to 5 cords per hour.

We also manufacture Lever and Railway Horse Powers, Threshing Machines, Clover Millers, Circular Wood Saws, &c. Send for a Circular of above. Address

G. WESTINGHOUSE & CO., Schenectady, N. Y.

ONIONS IN HILLS.

I will send Machines for sowing Onion Seed in hills, two rows at a time, boxed ready for transportation, for \$13 each. When sown by these Machines a large crop of carrots is raised on the same ground between the hills of onions. They are extensively used by the great onion cultivators of Long Island. JAMES J. H. GREGORY, Marblehead, Mass.

JERSEY BULL FOR SALE.—Thorough-bred, of excellent milking stock. Three years old in June. Address Dr. S. ROGERS, Pomfret, Conn.

CRANBERRY LANDS.—Tract of over 500 acres of land in Burlington Co., N. J., for sale. Over 100 acres suitable for Cranberry Culture. Abundance of Wood and Fencing Timber. BENJ. HAINES, 27 Courtlandt-st., New York.

CRANBERRY VINES FOR SALE.—A LARGE quantity of the best quality, by the barrel or by the 1000. Address J. WESTCOTT, Blue Point, Suffolk Co., Long Island, N. Y.

FOR BEST COLLECTION OF STRAWBERRY PLANTS at lowest rates see Feb. No. of the American Agriculturist, page 74. Also Philadelphia Raspberry Plants, \$4 per doz. Price List free. THOS. C. ANDREWS, Moorestown, Burlington Co., N. J.

STRAWBERRIES, Blackberries and Raspberries, all the best and newest varieties. Catalogues gratis. SAMUEL L. ALLEN, Cinnaminson P. O., N. J.

GOLDEN PALM OIL SOAP.

LINDLEY M. ELKINTON,
MANUFACTURER,

116 Margaretta Street, Philadelphia.
FOR SALE BY DRUGGISTS.

Colgate's Aromatic Vegetable Soap.

A superior Toilet Soap, prepared from refined Vegetable Oils in combination with Glycerine, and especially designed for the use of Ladies and for the Nursery. Its perfume is exquisite, and its washing properties unrivalled. For sale by all Druggists.

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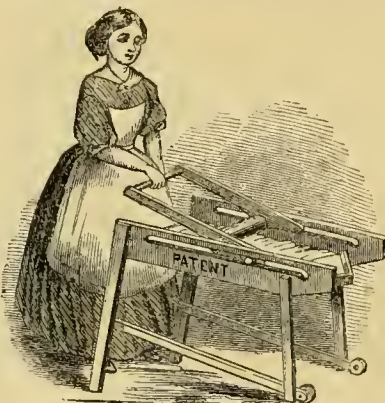
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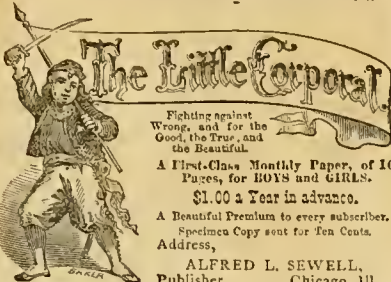
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Early Turnip.....	10 "	5 "
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Swiss Chard, or Silver.....	15 "	5 "
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Co. Red Mangel Wurtzel.....	10 "	5 "
Red Globe.....	10 "	5 "
Long Yellow.....	10 "	5 "
Yellow Globe.....	10 "	5 "

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Large A. Be.....	60 "	10 "
Early Be.....	60 "	10 "
Be..... Cape.....	75 "	15 "
Be..... Cape.....	1 00 "	15 "
Be..... Cape.....	1 00 "	15 "

Brussels Sprouts.

Be.....	30 "	10 "
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Cabbage.

Early Downy Leaf.....	25 "	5 "
Early Downy Leaf.....	25 "	5 "
Early Downy Leaf.....	25 "	5 "
Early Downy Leaf.....	25 "	5 "
Early Downy Leaf.....	50 "	10 "
Early Drumhead.....	25 "	5 "
Early H. H. H.....	25 "	5 "
Early Sugar Loaf.....	25 "	5 "
Early Late Bergen.....	40 "	10 "
Early Mason.....	40 "	10 "
Early Late Drumhead.....	40 "	10 "
Premium Flat Dutch.....	40 "	10 "
Green Globe Savoy.....	25 "	5 "
Drumhead Savoy.....	25 "	5 "
Green Glazed.....	25 "	5 "
Red Dutch Pickling.....	25 "	5 "

Carrot.

Early Scarlet Horn.....	15 "	5 "
Long Orange.....	15 "	5 "
Large Altringham.....	15 "	5 "
Long Blood or Purple.....	15 "	5 "
Large White Belgian.....	10 "	5 "

Cauliflower.

Early Paris.....	1 00 "	15 "
Half Early Paris.....	1 00 "	15 "
Early London.....	75 "	15 "
Early Walcheren.....	75 "	15 "
Large Asiatic.....	75 "	15 "

Celery.

Early White Solid.....	30 "	5 "
French, Self Blanching.....	30 "	5 "
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Turnip Rooted, Celeriac.....	30 "	5 "

Chervil.

Curled or Double.....	30 "	5 "
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Corn Salad.

Round Leaved.....	10 "	5 "
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Cress.

Curled or Pepper Grass.....	10 "	5 "
Broad Leaved.....	10 "	5 "

Collards.

English.....	15 "	5 "
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Cucumber.

Early Russian.....	15 "	5 "
Early Short Green.....	15 "	5 "
Early Green Cluster.....	15 "	5 "
Early White Spined.....	15 "	5 "
London Long Green.....	15 "	5 "
Extra Long Green Turkey.....	25 "	5 "
Gherkin or Burr.....	40 "	5 "

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	per quart.	per p'kt.
Early Sweet or Sugar.....	\$ 30 cts.	10 cts.
Large.....	30 "	10 "
Evergreen.....	30 "	10 "

Egg Plant.

	per oz.	per p'kt.
Early Long Purple.....	60 "	10 "
Improved Large Purple.....	1 00 "	15 "

Endive.

Green Curled.....	35 "	5 "
White Curled.....	35 "	5 "
Broad Leaved.....	30 "	5 "

Kale.

Green Curled Scotch.....	25 "	5 "
Purple Curled.....	25 "	5 "
German Brown Curled.....	25 "	5 "
Dwarf German Greens.....	15 "	5 "
Sea Kale.....	30 "	5 "

Kohl Rabi.

Early White Vienna.....	40 "	5 "
Large Green or White.....	25 "	5 "
Large Purple.....	25 "	5 "

Leek.

Large Flag, or Scotch.....	30 "	5 "
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Lettuce.

Early Curled Silesia.....	25 "	5 "
Large White Cabbage.....	25 "	5 "
Royal Cabbage.....	25 "	5 "
Imperial Cabbage.....	25 "	5 "
Ice Drumhead.....	25 "	5 "
Butter—very fine.....	20 "	5 "
Brown Dutch.....	25 "	5 "
Hardy Green.....	30 "	5 "
White Paris Coss.....	30 "	5 "
Green Paris Coss.....	30 "	5 "

Martynia.

Por Pickles.....	30 "	5 "
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Musk Melon.

Early Jenny Lind.....	15 "	5 "
Early White Japan.....	30 "	5 "
Early Christiana.....	15 "	5 "
Skilman's Fine Netted.....	15 "	5 "
Pineapple.....	15 "	5 "
Green Citron.....	15 "	5 "
Large Nutmeg.....	15 "	5 "

Water Melon.

Mountain Sweet, or Ice Cream.....	10 "	5 "
Mountain Sprout.....	15 "	5 "
Black Spanish.....	15 "	5 "
Goodwin's Imperial.....	30 "	5 "
Apple Seeded.....	30 "	5 "
Citron for Preserves.....	30 "	5 "

Mustard.

White or Yellow.....	10 "	5 "
Black or Brown.....	10 "	5 "

Nasturtium.

Tall (Indian Cross).....	25 "	5 "
Dwarf.....	35 "	5 "

Okra.

Long Green.....	15 "	5 "
Dwarf White.....	15 "	5 "

Onion.

Extra Early Red.....	25 "	10 "
Large Red Wethersfield.....	20 "	5 "
Large Yellow Dutch.....	20 "	5 "
Yellow Danvers.....	20 "	5 "
White Portugal.....	40 "	5 "

Parsley.

Curled or Double.....	10 "	5 "
Plain or Single.....	10 "	5 "
Hamburg or Rooted.....	15 "	5 "

Parsnep.

Long Smooth White.....	10 "	5 "
Gurnsey or Cup.....	10 "	5 "

Pepper.

Large Squash.....	50 "	10 "
Large Bell or Bull Nose.....	50 "	10 "
Long Cayenne.....	50 "	10 "
Sweet Mountain.....	50 "	10 "
Sweet Spanish.....	50 "	10 "
Red Cherry.....	50 "	10 "

Pumpkin.

Large Cheese.....	10 "	5 "
Mammoth.....	20 "	5 "
Cushaw.....	10 "	5 "
Connecticut Field.....	10 "	5 "

Radish.

	per oz.	per p'kt.
Long Scarlet Short Top.....	15 cts.	5 cts.
Early Scarlet Olive Shaped.....	15 "	5 "
Early Scarlet Turnip.....	15 "	5 "
Long Salmon.....	15 "	5 "
Long White Naples.....	15 "	5 "
White Summer Turnip.....	15 "	5 "
Yellow.....	15 "	5 "
Grey.....	15 "	5 "
Purple.....	15 "	5 "
Black Spanish.....	15 "	5 "
Scarlet Chinese Winter.....	25 "	5 "

Rhubarb.

Myatt's Victoria.....	20 "	5 "
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Salsify.

Vegetable Oyster.....	25 "	5 "
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Scorzonera.

Black Salsify.....	25 "	5 "
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Spinach.

Round Leaved.....	10 "	5 "
Prickly Seeded.....	10 "	5 "
Large Flanders.....	10 "	5 "
New Zealand.....	25 "	5 "
Lettuce Leaved.....	10 "	5 "

Squash.

Early Golden Bush.....	10 "	5 "
Early White Bush Scallop.....	10 "	5 "
Green Striped Bush.....	10 "	5 "
Summer Crookneck.....	10 "	5 "
Winter Crookneck.....	10 "	5 "
Boston Marrow.....	15 "	5 "
Hubbard.....	20 "	5 "
Lima Cocoon.....	15 "	5 "
Honolulu.....	30 "	5 "

Tomato.

Extra Early Red.....	30 "	5 "
Large Smooth Red.....	25 "	5 "
Fejee Island, Pink.....	25 "	5 "
Lester's Perfected.....	30 "	5 "
Large Yellow.....	30 "	5 "
Pear Shaped.....	30 "	5 "
Red Cherry.....	35 "	5 "
Yellow Cherry.....	35 "	5 "
Cook's Favorite.....	75 "	10 "

Turnip.

Early White Flat Dutch.....	10 "	5 "
Early White Stone.....	10 "	5 "
Red Top Strap Leaved.....	10 "	5 "
Large White Globe.....	10 "	5 "
Large White Norfolk.....	10 "	5 "
Yellow Stone.....	10 "	5 "
Yellow Aberdeen.....	10 "	5 "
Orange Jelly.....	10 "	5 "
Robson's Golden Ball.....	10 "	5 "
Long White French.....	10 "	5 "
Purple Top Ruta-Baga.....	10 "	5 "
Skiving's Improved Ruta-Baga.....	10 "	5 "
Marshall's.....	10 "	5 "
White Ruta-Baga.....	10 "	5 "

Herb Seeds.

Anise.....	15 "	5 "
Borage.....	25 "	5 "
Balm.....	40 "	5 "
Benic.....	25 "	5 "
Coriander.....	10 "	5 "
Caraway.....	10 "	5 "
Dill.....	15 "	5 "
Horehound.....	75 "	10 "
Hyssop.....	75 "	10 "
Lavender.....	50 "	10 "
Pot Marigold.....	30 "	5 "
Rosemary.....	75 "	10 "
Saffron.....	15 "	5 "
Sage.....	30 "	5 "
Summer Savory.....	30 "	5 "
Sweet Marjoram.....	50 "	10 "
Sweet Fennel.....	15 "	5 "
Sweet Basil.....	50 "	10 "
Tansy.....	75 "	10 "
Thyme.....	50 "	10 "
Winter Savory.....	30 "	5 "
Wormwood.....	75 "	10 "

Tobacco.

Connecticut Seed Leaf.....	50 "	10 "
Havana.....	\$1 00 "	15 "
Florida.....	50 "	10 "
Virginia.....	50 "	10 "
Kentucky.....	50 "	10 "
Ohio.....	50 "	10 "
Missouri.....	50 "	10 "

AMERICAN AGRICULTURIST,

FOR THE

Farm, Garden, and Household.

"AGRICULTURE IS THE MOST HEALTHFUL, MOST USEFUL, AND MOST NOBLE EMPLOYMENT OF MAN."—WASHINGTON

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NEW-YORK, APRIL, 1866.

NEW SERIES—No. 231.



HEAD OF BARON OF OXFORD.—DRAWN FROM LIFE BY EDWIN FORBES FOR THE AMERICAN AGRICULTURIST.

This is an excellent portrait of the head of one of the best Shorthorn bulls in this country or the world. The Oxford family was selected by Thomas Bates, of Kirkleavington, who achieved for the Duchess family of Shorthorns their unrivaled reputation, as the best for a cross to give fresh blood and to avoid too close and too long continued in-and-in breeding. Baron of Oxford was bred by, and is the property of Samuel Thorne, of Thorndale, Washington Hollow, New York. He is 10 years old, but in full vigor,

though in only moderate flesh. He is by Duke of Gloucester, out of Oxford 13th, by 3d Duke of York, and own brother to several famous animals sent out to England, by Mr. Thorne.

Wherever Shorthorns have been introduced, there has been an immediate increase in the cash value of whole herds—often of 50 per cent. This is permanent, *provided* the use of thoroughbred males is kept up; but if farmers can not resist the temptation to raise very promising grade calves, and use them as stock get-

ters, progress not only ceases, but a positive retrogression is at once observed. No one can rely on the progeny of a grade bull. The balance of nature has been disturbed in him, and it will show in his progeny. Not so in the use of full-blooded bulls upon grade cows, or upon those of mixed blood; in these cases the positive blood of the sire makes its mark with unerring certainty, and the animal may even excel his sire in beef qualities—including form, size, early maturity, aptitude to lay on flesh rapidly, etc.

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AMERICAN AGRICULTURIST.

NEW-YORK, APRIL, 1866.

The sun has passed the equinox, and already the earth warms with solstitial anticipations. The fields, though they early lost their snowy blankets, and were exposed to the furious and cold blasts of March, tardily indeed, but still surely, are, one after another, putting on their garments of verdure. Whatever fate befalls the Fenians, we all can unite in their chorus, "God save the Green." Whatever February and March may do to brown and blast the grass and grain, the warm sun and showers of April always save the green. It matters little how much work may have been anticipated, and with how much so ever forethought and industry the preparations for April work may have been made, there is always just as much to do as can be attended to. He that has been thoughtful, and is ready for work, will keep up with it, but otherwise he will be driven by it, and loose opportunities that might well be those tides in his affairs, which, if taken at the flood, would lead to fortune. Our readers would do well to run over the hints for previous months, especially about planning beforehand for all kinds of work, stock and crops. Keeping no accounts and working without plan, no wonder some say they have had *luck*. The results of work without plan may well be called *luck*,—with plan and knowledge, they may be anticipated with a great degree of accuracy.

Hints about Work.

Working Stock.—All kinds of stock ought to come through the winter in good condition, but animals that are to be put to hard work should come out in a little better order than they went in. Every ton of hay sold is money out of pocket if it prevents this result.

Oxen.—It may be a very pleasant thing for a man whose cattle have lost 100 or 200 pounds of flesh the past winter, to say that "they are just in good working order." But if cattle or horses are running down in flesh, they are in just the worst condition for being put to hard work. They must be well fed now at any rate, and thoroughly groomed. Give a pair of cattle a peck of corn meal daily upon hay or corn stalks, cut up and soaked 8 to 12 hours, with all the good hay they will eat. Allow them a long nooning, water regularly three times a day; see that the yokes do not pinch or gall them, and if they do, or their necks are tender, first wash and then lay or bind folded cloths, wet with cold water, upon the spots for an hour or two after work. The same treatment is good for galls upon

Horses.—Those that have not been much exposed during the winter should be blanketed when out of the stable, kept out of draughts, and rubbed down well if wet, with even greater care than is used at any other season. While the animal is renewing his coat he is particularly sensitive to changes of weather, and liable to take cold. Feed liberally and groom well, and this rather critical period will pass quickly. Horses turned into the fields for exercise, enjoy it so thoroughly that it is a great temptation to turn several loose together. Do not do it. They often strike or kick one another upon the head so as to produce swellings, diseases of the bone, or other permanent deformity. For hints about

Brood Mares, see previous numbers. Colts, if drop-

ped thus early, may be left chiefly to the care of the mares, kept clean, early accustomed to wearing a halter headstall, and taught to lead so that at a few weeks old they may be led by the sides of their dams on the road or at the plow.

Cows and Calves.—Cows that have had to "rough it," if fed a little corn on the ear, or perhaps simply have the quality of their feed a little improved just before calving, notoriously pass this period successfully, while the better attended animals often have a hard time. The reason lies in the well cared for cows having too little air, sunshine, exercise, etc.,—perhaps in being made too fat. Give cows the tonic of the wind and the light, plenty of sweet hay, clean stables, the card with a few roots daily, if you have them, and a handful or two of ears of corn if you please, (which some of our friends consider a specific against slinking), and the calves will come along in good condition, and the flow of milk will be abundant. If there are signs of caking or feverishness in the bag, bathe with warm soap suds, and afterwards wash with dilute tincture of arnica.

Bees intended for grazing, should be kept constantly on the gain by feeding corn meal or oil meal upon cut straw, wet up.

Sheep need dry, well-littered sheds and yards, with a feed of roots daily, if possible. Boughs of hemlock or pine thrown to them two or three times a week, promote the health of the flock. Yearling ewes should have close, well ventilated sheds, littered with straw cut 8 inches long, and warm yards. The long tags of wool should be clipped off around their teats, so that there will be no difficulty in the lambs finding them. Should the lambs become chilled, bring them into the kitchen, near a good fire; if badly off, give warm baths, rub them dry, wrap them in blankets, and feed fresh ewe's milk, warmed. A few spoonfuls of mild milk punch (say one tablespoonful of proof spirits in a teacup of milk, sweetened) will often revive them at once.

Swine.—Raw roots fed daily before farrowing, is one of the surest preventives of constipation, and consequently of that depraved state of the stomach and bowels which leads a sow to eat her own young. See "basket" item on sows overlying the pigs. Look out early for a good stock of pigs, or store hogs for manure makers. The markets are dull now on account of the hog panic about the trichina disease, which is described on page 147.

Poultry.—Whoever will give proper care to early chickens, may set the hens as early as the first of April. Early chickens are particularly useful as insect killers, for the first insects are the parents of future swarms. Give seldom more than 13 eggs. Select those of perfect form, of medium or not extra large size, and strong shells. Mark each egg with a lead pencil, and on several put the date at which they are put under the hen. Let hens lay in movable boxes, so that when they begin to set they may be removed away from the laying hens. Feed regularly, and keep water always before them. Feed may always be kept before sitting hens if rats are not troublesome. *Turkeys* should be confined and made to lay at home in a low box or basket, where they can be controlled, so that when their young hatch they may be kept in doors for a week or ten days, as they are very apt to die if they get wet. Set *Ducks'* eggs under hens. Geese take care of themselves, but should not be forced to go far from food while sitting.

Birds.—Wren and Bluebird houses should be put up early, but those for the different birds kept apart, they quarrel. Robins, though they are great thieves, may be attracted, if it is desirable, by making a basis for a nest in the crotch of a tree, and putting a board a few inches above it for protection. Prepare for only one robin's nest in one part of the grounds. The quarrels of robins, too, are annoying, and occupy their time which should be spent in killing insects. Cat-birds can't be coaxed by nesting places, but will perversely find their own in hedges, etc. Let them severely alone, and one will have no better friends.

Field Work.—The farmer should begin each day with a clear notion of about what, and how much each man and team will do if it remains clear, or if rain comes. He must be his own judge of when rain is severe enough to stop work, and when men and teams will receive no harm. In

Hauling out manure, it is best to spread and plow it under immediately, though a day or two of fair weather will not injure it. Rain, however, washes it, and the crop will show where the heaps stood. There is danger, too, that rain may render the soil for several days unfit for

Plowing, which should only be done when the ground will crumble, and after the water is so much out of it that the furrow slices will not dry and bake into hard clods. In breaking up grass land turn an absolutely flat furrow. Increase the depth of the soil just as fast as it is safe to do so when plowing for all hoed crops, and on dry or well drained land, the subsoil plow will be found to pay well. Get in

Spring grain of all kinds as early as the ground can be well worked. See several items on this subject in the present number, and that for March.

Flax should be sowed in very well-prepared soil, as soon as it is thoroughly warm. Our readers who are interested in the culture of

Onions, or of *Flax, Hops* or *Tobacco*, can not do better than to consult the pamphlets on these crops, which we publish. We have received the thanks of hundreds for having furnished so much information in so convenient and cheap a form. See Book list on another page.

Carrots and Parsnips may be sown as soon as the ground is thoroughly worked and warm. Barely cover the seed and they will come up much sooner than otherwise, and are then out of danger. So far as our experience goes, mild frosts do not hurt parsnips; they germinate very slowly, and so if wet weather comes, (and such is almost sure to come in May,) the seed rots. We prefer sowing quite early if the land is dry and warm. Put carrots on lighter soil than parsnips, if you can choose, and for both crops work the land deeply and thoroughly, and manure it well.

Potatoes.—Plow deep. Manure with a good compost, and with leached ashes in the drill, or use any manure not in a condition of rottenness. Plant early and 4 or 5 inches deep, using large seed cut in quarters. Plant no small potatoes of any kind, but if you wish to make the seed go as far as possible, cut to single eyes, plant not quite so deep, and give better care.

Pastures.—Keep every hoof, large or small, off them; pick off the stones, cut the brush, clear up the fence rows, reset the fences if necessary, and sow grass seed, ashes and plaster on thin spots. Treat in the same way the

Mowing lands, conducting upon them the road wash. Apply any saline manure at hand, as ashes, plaster, sulphate of ammonia, crude saltpetre, guano, either in fine composts or sowed on, or if soluble, by the liquid manure distributor.

Orchard and Nursery.

Trees will have a hard time of it this month. Rudely taken out of the ground, carelessly handled in transportation, dried up by being long in transit, stuck into the holes with only enough care to keep them right end up, and then left to begin life anew, their treatment is often such as to excite pity in those who care for living things. Trees have life, and a great deal of it, or they would never survive much of the rough usage they get. If they only had consciousness, with what grim satisfaction might they in after years listen to the grumbling at their unfruitfulness. Nurserymen have blame enough that they deserve, but all trouble with trees is not chargeable to them. They must do all the mischief that the tree can get at their hands in a very short time, while the purchaser can spoil the tree at his leisure. When trees are received from the nursery, if not ready to proceed immediately to planting, open a trench in a convenient place, unpack the trees and heel them in, covering the roots

well with moist earth. If, as sometimes happens, the tops are dry and the bark shriveled, bury the whole tree for several days. In planting, have the holes large enough, trim all mutilated roots with a cut sloping from below up, and shorten the branches as directed last month. Fill in with good surface earth, but do not put manure around the roots.

We have been looking over the letters relating to orchards, that have lately accumulated, and find many complaints which may all be summed up in

"What ails my apple trees?" As far as we can judge from the description of the diseases, we should say, wet feet and starvation—one or both.

There are but few of these unfruitful orchards, or those in which lack of size and fairness in the fruit is complained of, that would not be greatly helped by draining or manuring, or both. Put down large tile or other drains between the rows; and this may be done without difficulty in orchards where the trees are large. Give a good dressing of composted manure and plow it in, and if the trees are not very large, some hoed crop, such as beans, may be planted, not for the crop, but just as an inducement to use the hoe. Lime often has a strikingly beneficial effect on an exhausted orchard.

A very old and neglected orchard, unless the trees seem to have a good deal of promise in them, will not pay for much trouble and expense. It is better to set out a new orchard in a good place.

Grafting is oftener done too early than too late, and much of the lack of success is due to setting the cions long before growth begins, and thus exposing them to the drying influence of the winds. Cions put in just as the buds on the stock are ready to burst, are more likely to take than those worked in March. In late grafting, more care is required, as then the bark parts readily from the wood, and bad wounds may be made in carelessly sawing the limbs. The stock should be more advanced in growth than the cion, though some claim equal success with cions cut at the time of inserting them. Any one who can whittle, can graft, and every farmer's boy should know how to do both. The operation was fully described and figured in March, 1864, and we have not space to repeat. Those who wish to raise their own

Stocks for budding or grafting, should get the seeds in early. The pits of peaches and other stone fruits that have been kept buried during winter, start very early in spring; and if they are found to have germinated, will require careful handling. It is the practice with some to allow the seeds to germinate, and then to pinch off the young root before planting, with a view to forming a more branching root. Apple and pear seeds need to be sown in a finely worked soil, enriched with well-rotted manure, ashes and lime.

Quinces are most welcome as a fruit, but they are seldom much thought of or cared for as a tree. The trees have a slow growth when young, but, when they come into fruit, are profitable. The young tree should be trained to a stake until it gets strong, and pruned so as to form a regular head, at about four feet from the ground. They may be grown as pyramids, with fruit branches near the base, but the leader must be kept tied up to a stake. The Orange or Apple variety is the one most cultivated. Rea's seedling is highly spoken of, but it seems to be scarce. We are sometimes asked why we say no more about

Plums.—If one will give the time to fight the curculio and black knot, he may be tolerably sure of success, but without this, all planting of plum trees is useless. A selection of varieties was given in the February *Agriculturist*, page 62.

Peaches succeed best in hilly districts, and upon land not before occupied by a peach orchard. Land, suitable for a good grain crop, will do for peaches. Eighteen to twenty feet is the usual distance. The orchard is cultivated to potatoes or buckwheat between the rows. On a subsequent page a novel method is given for treating a peach orchard. Another plan recommended for their treatment is, to cut the young trees back at planting to 18 inches, and thus induce them to grow in a bush form. The

varieties mostly grown for the Eastern markets, are:—Troth's Early, Honest John, Crawford's Early, and Old Mixon. Hale's Early receives commendation everywhere, as the earliest good peach. Crawford's Late, Smock, Heath, Ward's Late, Morris White, and other late sorts are grown.

Fruit Garden.

The suggestions given last month as to preparation of the soil and planting, will for the most part be appropriate now. Many of the hints given under Orchard and Nursery, are equally applicable to the Fruit Garden. Planting of all kinds should be done as early as the ground can be worked, or the plants procured.

Dwarf Trees are the only ones admissible in the fruit garden, and these can be kept as small and compact as is desired, by root pruning, or if space will allow, they may develop into medium sized trees. One great trouble, especially upon pears, is

Insects on the Bark.—The scale and woolly Aphis if not checked in time, will often completely cover the bark. The first is a little brown scale, shaped somewhat like a miniature oyster shell, and the other is a little louse, with a copious covering of white wool which makes him quite conspicuous. Soft soap, made sufficiently thin, and applied all over the limbs with a stiff brush, rubbing moderately hard the while, will usually do for them. A friend of ours is using petroleum for this purpose, but we await the results before recommending it. We have an article elsewhere on cultivating the

Fig.—A few trees are worth growing as curiosities, if nothing more. In a sheltered situation with proper care, they will usually bear fruit.

Almonds are also interesting, and it is well to have a tree for the novelty of the thing. They will flourish wherever the peach will. Nothing makes a finer show than a

Quince Tree, laden with its golden fruit, and it is also handsome when in flower. See hints for training, under Orchard and Nursery.

The Currant is, so to speak, one of the most flexible of fruits. Neglect will bring small fruit from large varieties, and pruning and manuring will induce the small sorts to swell to a respectable size with gratitude for the attention. The moral of which is, manure the currant bushes.

Gooseberries should not be overlooked. The Houghton and American Seedling are better than no gooseberries. We do not see why Downing's Seedling is so generally overlooked. It is a much better fruit than either of the others. Why don't some one get up a gooseberry as hardy as the Houghton and as good as the Whitesmith?

Raspberries and Blackberries have their cultivation sufficiently treated of on page 145, and with other things have quite crowded out our notes on

Grapes.—Varieties have been so fully discussed during the past year, that but little can be said about them until the growing season. Of course many thousands of vines will be planted, many without proper care will fail, and the nurserymen, the variety, or the season, will be blamed. Unless the soil is naturally drained, drain it. Work the soil well to the depth of 18 or 20 inches. Use no other than vegetable manure at planting. Make the hole large, put in fine surface soil so as to form a flat mound. Set a stake 6 or 8 feet high, place the vine beside it, and spread its roots evenly in all directions. The point from which the roots start, should be about 4 inches below the surface. Cover the roots carefully with fine soil, fill up the hole, and press the earth moderately with the foot. Allow but one cane to grow the first year, and that should be from the strongest shoot that pushes. Any vines remaining covered, should be lifted, and tied to the trellis.

Strawberries, as soon as winter is well over, are to be uncovered, parting the straw so as to expose the plants, but leave the ground covered. New beds are to be planted as early as possible. For the garden, beds 4 feet wide, with 2 feet walks between them, answer the best. Set the plants in three

rows, one in the center and the others 18 inches from it, and the plants 18 inches apart in the row. Spread the roots, and set as deeply as can be done, without covering the center of the plant. Some prefer to set the plants a foot apart each way, but for varieties that form large stools, in hill culture, 18 inches is none too great a distance.

Kitchen Garden.

The notes for the month of April need to be made with a larger margin than those of any other month, as the differences in localities are more manifest than they are a few weeks later. It is impossible to give directions which will not require some discrimination on the part of the reader. As a general thing, many seeds are planted too early; for all but the very hardy plants it is better to wait until the ground is well warmed. Shelter is of great importance to the garden, and a close fence or a thick belt of evergreens, to ward off the prevailing winds, will bring things forward much earlier than when the winds have full sweep. It may be that there are some who have not yet made their selection of seeds; such will do well to consult the list given on page 63, Feb. For convenience of reference we place our notes this month in alphabetical order.

Asparagus.—Remove the coarser portions of the litter with which the beds were covered, and then go carefully over the bed with a fork and turn up the surface, taking care to work gently around the plants and not injure either buds or roots. New beds may be made if roots can be procured. The soil should be moderately light and very rich, and there must be such natural or artificial drainage, as will ensure a dry subsoil. In family gardens it is best to plant in beds, five feet wide, with alleys between them, as this allows of cutting the crop without trampling the beds. The beds are prepared by spading 18 inches or 2 feet deep, working in a great abundance of manure. The best way is to trench the bed thoroughly, working the manure in to the bottom of each trench. Set three rows of roots in the bed, one row in the center, and the others one foot from the edge, putting the plants a foot apart in the rows. The plants should have their roots well spread, and their crowns three or four inches below the surface. Keep the bed free of weeds. If plants are to be raised from seed, sow them in drills, a foot apart, in rich soil. An ounce of seed will produce about a thousand plants. When well up, thin to three inches. Salt is considered beneficial to Asparagus, and a dressing is frequently applied in the spring. It is certainly useful in destroying weeds and worms, but whether directly beneficial to the Asparagus, is a point on which experimenters differ, the majority favor it.

Artichoke.—The true artichoke is but little known in this country, and is not much esteemed except by a few. It is a plant with large thistle-like heads, which are the eatable portion. The seed is sown this month in drills, a foot apart. Where there are old plants, suckers may be taken off next month.

Beans.—It is too soon in most places for any but the English or Broad Beans, which are not much favored by Americans. These can be planted in strong clayey soil, as soon as the frost is out, in drills about 2 feet apart. Limas may be sown on inverted sods in the hot-bed, as described in March.

Beets.—Sow the early sorts in a rich, light and finely worked soil, in rows 15 inches apart. Soak the seed in warm water for 24 hours, turn the water off and keep the dish covered in a warm place until the sprouts show themselves, then roll the seed in plaster and sow. An ounce of seed will be enough for about a hundred feet of drill.

Broccoli.—A plant much like cauliflower, but quite inferior to it. Treat the same as cabbage.

Cabbages.—Plants, wintered in cold frames, may be put out if not already done. Those started early in hot-beds, are to be transplanted when large enough and the weather is suitable. The plants should be previously hardened by free exposure to the air. Sow seed in the open border in drills, about 4 inches apart. An ounce of seed will be

enough for 40 square feet of bed. The young plants, whether under glass, or out of doors, are apt to be injured by the Cabbage flea. We have used ashes, freely sprinkled over the plants, with success. Others recommend Scotch snuff, soot, and lime. Cabbages need a very rich soil and thorough cultivation. One of our best cultivators informs us that the free use of lime will prevent club-foot, and that, by using it, he grows cabbages on the same land, year after year indefinitely.

Carrot.—For early crop sow in a warm place, the Early Horn. The Early Forcing is small, but very early. Soak the seed for 24 hours in warm water, dry off with plaster, and sow as directed for beets. An ounce of seed sows 150 feet of row.

Cauliflower.—The treatment of plants raised under glass, is the same as for cabbage. Set out 2 to 2½ feet apart; sow for late crop in open border.

Celery.—Sow in a gentle hot-bed or cold frame for early, and when the plants are large enough, transplant to another frame, setting them 3 inches apart. Sowings in the open ground should not be made until the soil becomes thoroughly warmed. Treat Celeriac, or Turnip-rooted celery, the same.

Chives.—An old-fashioned member of the onion family, figured and described in June, 1864. It is sometimes used for edgings to beds. Set the bulbs about 6 inches apart.

Cress (Peppergrass).—Sow thickly, in shallow drills, 6 or 8 inches apart, at intervals of one or two weeks.

Cucumbers.—Sow in cold frames, which are to be carefully closed at night and aired during the day. Keep the plants from being burned by the sun when the sashes are on. Some weeks may be gained with cucumbers by starting the seeds on bits of inverted sod, as described last month. These may be placed in a frame under glass, or set in a box in the kitchen window. When the plants are well up, leave only two to the piece of sod, and when they have made four rough leaves, pinch out the growing end. In this way, strong plants will be ready to set out when the weather is warm enough.

Egg Plant.—Sow in hot-bed. Those already up are to be transplanted, as soon as large enough to handle, into another bed with a gentle heat. Don't let them get chilled, as they are slow to recover.

Garlic.—This is propagated by breaking up the old bulbs into cloves or sets, and planting these six inches distant, in rows a foot apart.

Horse-radish.—This is a profitable crop near large cities. It needs a rich deep moist soil. It is propagated from bits of the root about 2 inches long; these are put in with a dibble about 6 inches deep, in rows 18 inches apart, and 9 inches in the rows. The planting is done as early as possible. Some put the rows two feet apart, and sow early beets or carrots between the rows. In either case the surface should be kept clean.

Herbs.—Under this general term are included those plants grown for seasoning. Sage, Thyme, Savory, Marjoram, and Basil are the common. Sow in cold frame or in open border when soil is warm.

Hot-beds and Cold Frames.—The plants in these will need close attention. They must have all the air possible without danger from sudden changes of temperature; when the sash must be kept on during a cool day, see that the sun does not burn the plants. Put on the sash in the afternoon, before the air becomes cool. Give water as may be needed, always taking the precaution to warm it to at least the temperature of the bed. Pull up weeds as they appear, and if the soil becomes hard between the rows, break it up with the finger. Thin out the plants before they become too crowded, and if desirable to save the thinnings, set them out in another bed. If the heat of a bed declines sooner than is desirable, place linings, as they are called, of hot manure around the old manure. As the time for removing the plants approaches, keep the plants exposed as much as is safe, in order to harden them off.

Kohl-Rabi.—Sow and treat the same as cabbage.

Leeks.—Sow as soon as the ground is in order, in

shallow drills, 15 inches apart, if they are to grow where they are sown, and but 6 inches apart if to be transplanted, which is the better way.

Lettuce.—Plants in cold frames need an abundance of air, and in warm rains, remove the sash entirely. Sow in a sheltered spot as soon as the ground is open. The Silesia is the hardiest and best for this purpose. Sow very thinly, in shallow drills, about 8 inches apart. Plants from seeds sown under glass may be transplanted to very rich soil; set them a foot apart, each way.

Mustard.—Sow for salad as directed for cress.

Melons.—Seeds for a few early hills may be forwarded on sods as directed for cucumbers.

Onions.—Put out Potato and Top onions and onion sets, in rows a foot or 15 inches apart, and the bulbs 4 inches distant. Onions from the seed, or "black seed" as growers call it, are not usually successful much south of N. Y. city. Wherever they are grown, they should be sown early in highly manured soil. Hen manure is found to be very serviceable for this crop. Get the soil in the finest possible tilth, and, in the garden, it is a good plan to burn brush over the bed to destroy weed seeds. Be sure to get good and fresh seed, and sow it in drills 15 inches apart. An ounce will sow about 200 feet of drill. For field culture our excellent pamphlet gives full details. See Book List.

Parsley.—Soak the seed for 12 hours and sow in drills a foot apart. It is a long while in coming. An ounce of seed to 200 feet of row.

Parsnips.—Sow as early as may be, in deep rich soil, in drills 15 inches apart. Be sure of last year's seed. An ounce to 200 feet. Allow some of the finest of last year's roots to produce seed.

Peas.—A light dry soil that has been manured the year before, is better than one recently enriched. Sow as early as possible, putting the seeds three inches deep and an inch apart. It is customary to plant double rows 9 inches apart. Set the brush between the rows. In the market gardens the rows are 3 feet apart, and as the peas grow, they are earthed up, without any brush. But in gardens neatness as well as productiveness require that the vines be supported. Soak before planting.

Peppers.—Sow in hot-bed or frame, if not already done. Treat the plants as directed for Egg Plant.

Potatoes.—Early potatoes are the only ones to be grown in the garden, where drills answer better than hills. Open drills 2 feet apart and 6 inches deep, and drop good-sized seed 9 to 12 inches apart.

Radishes.—Any spare space in the frames may be occupied by radishes. Sow early in the open ground, in light rich soil, in drills 10 inches apart. Sow every 10 days or 2 weeks, for a succession.

Rhubarb.—Fork in the manure placed on the bed last fall. Make new plantings if the growth has not started too much. Force a few roots by placing a barrel, without heads, over each, and surrounding it with hot manure.

Salsify sow this month or next; see last month.

Sea-Kale.—A vegetable little cultivated in this country. Plants are raised from seeds sown this month. The after-treatment is as for asparagus, except to ridge earth over the plants in autumn.

Spinach.—Remove litter from the wintered crop, and loosen soil around the plants. Sow the round-leaved sort in 15 inch drills, in very rich soil.

Squashes.—Some plants of the early bush sorts may be forwarded as directed for cucumbers.

Seeds.—Those who save their own seeds, should get their roots, etc., out early. Use only the best shaped and best kept onions, turnips, carrots, cabbages, etc., and set them out in well manured soil. It is not well to attempt to raise the seed of more than one variety of each within the limits of a moderate garden. Never set a cabbage stump for seed, but a whole plant, and the very best, and then allow only a few strong central stalks to grow.

Swiss Chard.—This is a variety of beet, the leaves of which afford an excellent substitute for spinach in mid-summer. Sow and treat the same as beets.

Sweet Potatoes.—Where only a few plants are want-

ed, it is cheaper to buy than to raise them. The shoots are started in hot-beds. The potatoes are split lengthwise and laid flat-side down, and covered about two inches deep, with rich compost. After the shoots push up through this, another inch is added. Watering and airing are to be attended to. When the shoots are well rooted, the potato is taken up, and all the well rooted plants of sufficient size are slipped off, and the potato put back in the bed to give the others a chance to grow. A bushel of potatoes, it is said, will yield five thousand plants, when well attended to.

Tomatoes.—Seeds may still be sown under glass, or in the house. Those sown early, will need to be transplanted to other beds or potted in small pots. When the roots are crowded in pots, the plants come into flower very early. By pinching off the stem above the first cluster of flowers, the growth is directed to the side shoots, which may in turn be pinched, and thus the plant be kept quite dwarf and stocky, and the fruit will thus be improved.

Turnips.—Get the seed in as early as possible, in drills 12 inches apart, that is for early table turnips.

Flower Garden and Lawn.

The notes of the last two months will give hints for some work that may yet be done. The covering of bulbs and tender perennials may be removed and the soil of the borders carefully forked over. A spade should never be used for this purpose. In a well kept garden, the walks should always be in perfect order. Dress the gravel, add fresh where needed, and roll. Coal ashes will pack loose gravel. No plants are more satisfactory than

Flowering Shrubs, and we have from time to time given notices of the best native and exotic species. Syringas, Persian Lilacs, Japan Quince, Wiegels and several of the Spireas, are readily obtainable by a small outlay. Then there are

Roses, always the one plant that must be in the garden. Buy only those on their own roots. In planting out the perpetuals, cut them back to three or four buds. Climbing varieties may be introduced where there is a place for them, and such a place can usually be found. We are very partial to

Climbers of all sorts, and if there is no place which needs covering, we would set up cedar or other posts, and train climbing roses, Wistarias, Honeysuckles, Trumpet Creepers, etc., to them.

Hardy annuals that were started in the house or hot-bed, may be put out as soon as the ground is ready; the tender ones not until cold nights are over. Seeds of Balsams, Asters, and other tender kinds may still be sown in doors or under glass. Candytuft, Whitlavia, and all such hardy annuals may be sown early in the open border, but the majority of flower seeds are best kept out of ground until the soil gets thoroughly warm.

Perennial Herbaceous plants need, as a general thing, to be reset about once in three years, reducing the clump by dividing with a sharp spade.

Biennials, such as Hollyhocks, Foxgloves and Sweet Williams, should have been transplanted from the seed bed in autumn, but it may be done now.

Plants in pits, such as tender Roses, Carnations, etc., are to be freely exposed during the day to harden them, and then to be turned out into the border when frosty nights are over.

Peonies should not be disturbed in the spring if it can be avoided, as it is pretty sure to prevent their blooming. The proper time is in the fall. Do not be in a hurry with

Bedding Plants.—These have been in the warm air of the propagating house, and ought not to go out until the soil is warm and the weather settled.

Bulbs of Gladiolas and Japan Lilies are hardy, and may be set as soon as the ground is in order.

Green and Hot-Houses.

The Green-house will now do without fire heat, and the plants should have abundant ventilation, when not too cold, to harden them for removal.

Shrubs, including Camellias, that are making a new growth, may be pruned into good shape and

be freed from insects. If any plants stand in need of more pot-room give them a shift to larger pots.

Plants in flower need to be kept near the light, and the usual precautions taken to keep them clear of insects. Much of the time of the gardener will be occupied in

Propagating a quantity of bedding plants for use in the borders. As soon as they are rooted, pot into small pots, and when the roots become pot-bound, either shift to larger pots or shake out the earth from the ball and repot in the same pots.

Fuchsias are readily multiplied from cuttings of young wood; they make good plants in a short time.

Delicate Annuals, such as Lobelias and Salpiglossis, and fine seeded things, may be sown in pots.

Dahlias may be brought into a warm place where they will sprout, after which they may be divided. A spent hot-bed answers very well for this purpose.

Cold Grapery.

The time for uncovering the vines is of course governed by the locality and season, but it is usually done early in April. If the vines were put in place at once, the upper buds would break first and get so much the start of the lower ones that the growth would be very unequal. This is remedied by suspending the vine temporarily in such a manner that the upper end will bend downward, and it is kept in this position, changing the point of suspension if necessary to make the buds break evenly, until the shoots are 2 or 3 inches long. When the vines are uncovered, fork up the inside borders and syringe the house thoroughly. If the vines show cracks and begin to bleed, it indicates that the wood was not well ripened, or that the vines have suffered from the cold of winter. If the trouble proves serious, and the upper buds do not start well, the vine must be cut back. When the lower shoots have grown to about 18 inches, select a strong one and cut the vine back to it. This shoot is to be trained in place of the cane that was cut away. The temperature of the house should be about 65° until near the end of the month, when it may reach 70° or 80°, when all parts of the house and the vines should be wetted by using the syringe morning and evening. Avoid drafts and sudden changes of temperature.

Apiary in April.

Prepared by M. Quinby—By request.

When all the stocks in an apiary are strong, and have sufficient stores, there will be little to do through the spring, for there will not be the least danger of robbing, nor danger of extensive injury from the moth. This state of things shows that they have prospered, and is a guarantee of success in the future. There will be some moth worms to be found on the floors of the hives, except in the hives of the Italians, during this and next month, until the bees cover the combs. Sweep out and destroy them. All moths and worms remote from the bees have been frozen to death in the winter, and as the perpetuation of the pest depends upon those few now to be found; this is a great inducement to destroy as many as possible. Put up the wren boxes now as near as possible to the bees. It is not to be expected that every hive in a large apiary will be No. 1. Some may have abundance of honey and but few bees; another, bees enough and a scarcity of honey; others will lack both bees and honey. These are poor hives, and one or two such require more attention through the spring, than one hundred that are in good condition. It is necessary to inspect closely to know which they are, and what is the matter. See to it on warm days that no robbing is done. Do not wait to see the bees fighting before any measure is taken to prevent pillaging. Hives are often robbed without any contention whatever. Close the entrance, allowing room for only one bee to pass at once. Light colonies must be fed just before they starve, for although they may be bringing in pollen daily, most observers cannot tell whether they are getting sufficient honey to prevent starving, before

clover appears. If you have honey in the comb,—taken from healthy hives, or boxes part full, you may feed on the top of the hive—protecting from other bees by a good cover; it will be taken down as required. Bees should be fed in small quantities, two or three times a week, or oftener. When syrup and sugar or strained honey is used, put it on the top in a saucer or similar dish, and lay something around it that they may creep into it readily, and scatter cut straw on the surface to keep them from drowning. Candied honey should not be fed without first adding water—a pint to six or eight pounds—scalding and skimming. There seems to be an increasing desire to transfer bees to the movable-comb hives, and some of the new readers of the *Agriculturist* would like specific directions. The present month is perhaps the best time. Straight combs are preferable. Get a new box of the size of the hive from which the bees are to be transferred, and make it comfortably warm inside, by setting it in the sun or a warm room; then invert the hive, which should contain a strong colony; drive, by pounding on the hive, all the bees that will go into the box. Now pry off one side of the hive, cutting the attachments of comb at the side and top, as may be necessary. Take out the first comb and lay it carefully, without bruising, on several thicknesses of folded cloth. Lay over it the frame in which it is to be fitted, and mark or cut the comb to the exact size. It may be held in the frame by winding twine several times around. Fine wire is better, or the splints may be used as recommended in the revised "Bee Keeping." Keep the frame perpendicular, that the comb may rest on its edge. Be careful to put all the combs in the same relative position as before, that the brood may be all together. When all is arranged, the bees may be shaken out upon the top of the frames and covered with a close box, or set in a perfectly dark room to keep them from flying until they find their way among the combs, and take up all dripping honey. Then they may be returned to the stand. Avoid opening the movable comb-hive on a morning in the open air, or in cool weather, lest the brood be injured. Better bring it into a moderately warm room.

Take advantage of the first stormy days to repair any old hives or boxes that have been neglected. Scald and scrape clean the inside of old hives, and they will answer to use again. If any painting is to be done, it should not be delayed. It is very difficult to make new swarms stay in a hive newly painted, or one painted a dark color, when in the sun.

Catalogues, etc., Received.—Third Annual Report of the Proceedings of the West Jersey Fruit Grower's Association for 1865.... Report of the House Committee on Agriculture of the State of New Jersey, for 1866, from Hon. I. P. Trimble.... Catalogue of Erie Commercial and Benton Nurseries, J. A. Plattman, Proprietor, Erie, Pa.... List of Strawberries, Monitor Potato, etc. Ed. Wheeler, Kalamazoo, Mich.... Catalogue, Central Nurseries, E. J. Evans & Co., York, Pa.... Catalogues of Trees, Green-house and Bedding Plants, Flower Seeds, etc. Frost & Co., Genesee Valley Nurseries, Rochester, N. Y.... Catalogue, Reading (Mass.) Nursery, J. W. Manning, Proprietor.... Seed List of Wm. Hacker, Philadelphia, containing several specialties among grains, etc.... Catalogue of Vegetable, Flower, Fruit, Herb and Field Seeds, R. H. Allen & Co., 189 and 191 Water St., N. Y.... Catalogue of Small Fruits and other Nursery Stock of Pomona Garden and Nursery, William Parry, Cinnaminson, Burlington Co., N. J.... Catalogue of Vegetable and other Seeds, Brill & Kumerle, Newark, N. J.... Knox Fruit Farm and Nurseries, Pittsburgh, Pa. A catalogue of small fruits, etc., and which contains, besides the business matters, a great deal of interesting reading.... Montclair (N. J.) Small Fruit Nursery, E. Williams.... McElwain Bros., Springfield, Mass. Illustrated General Seed Catalogue.... Descriptive and Illustrated Catalogue of Agricultural and Horticultural Implements, Griffing & Co., 58 and 60 Courtlandt St., N. Y.... Hovey's Illustrated Guide to the Flower and Vegetable Garden, Boston, Hovey & Co.

Locality for a Plum Orchard.—"D. B. G." Hannibal, Mo. With a good strong and well drained soil we should not be particular about the aspect. The trees are not especially tender, but the failure of the crops is generally due to curculio and black knot.

Commercial Matters—Market Prices.

The following condensed, comprehensive tables, carefully prepared specially for the *American Agriculturist*, show at a glance the transactions for a month, ending March 16, 1866, and the exports of Breadstuffs from this port thus far, since January 1:

1. TRANSACTIONS AT THE NEW-YORK MARKETS.

RECEIPTS.	Flour.	Wheat.	Corn.	Rye.	Barley.	Oats.
24 days this month	117,000	13,700	161,000	8,400	93,000	131,000
25 days last month	109,500	24,500	211,000	6,300	69,500	204,000

SALES.	Flour.	Wheat.	Corn.	Rye.	Barley.	Oats.
24 days this month	261,000	647,000	984,000	189,900	181,000	
25 days last month	251,000	512,500	956,000	69,000	101,000	

2. Comparison with same period at this time last year.

RECEIPTS.	Flour.	Wheat.	Corn.	Rye.	Barley.	Oats.
24 days 1865	117,000	13,700	161,000	8,400	93,000	131,000
22 days 1865	119,000	15,500	216,000	7,500	27,500	314,000

SALES.	Flour.	Wheat.	Corn.	Rye.	Barley.	Oats.
24 days 1865	261,000	647,000	984,000	189,900	181,000	
22 days 1865	191,000	332,000	195,000	27,000	69,000	

3. Exports from New-York, January 1 to March 15:

	Flour.	Wheat.	Corn.	Rye.	Oats.
1866.	210,295	67,700	1,265,387	79,732	192,271
1865.	274,759	138,960	1,014,045	141	16,613

CURRENT WHOLESALE PRICES.

	Feb 15.	March 15.
PRICE OF GOLD.	138 1/2	130 1/2
FLOUR—Super to Extra State	\$6 85	\$8 40
Super to Extra Southern.	8 85	15 50
Extra Western.	7 80	15 50
Extra Genesee.	8 45	11 50
Superfine Western.	6 85	7 35
RYE FLOUR.	4 75	5 90
CORN MEAL.	3 75	4 40
WHEAT—All kinds of White.	2 00	2 65
All kinds of Red and Amber.	1 55	2 50
CORN—Yellow.	80	90
Mixed.	74	81
OATS—Western.	55	56
State.	56	57
RYE.	87	1 05
BARLEY.	90	1 20
HAY—Bale 100 lb.	85	95
Loose.	50	1 10
STRAW, 100 lb.	65	1 20
COTTON—Middle.	41	46
HOPS—Crop of 1865.	25	65
FEATHERS—Live Geese.	60	70
SEED—Clover.	12	13 1/2
Timothy, 1 bushel.	4 00	4 35
Flax, 1 bushel.	2 60	2 90
STEAR—Brown.	10 1/2	14 1/2
MOLASSES, Cuba.	32	50
FREEBIE—Rio (gold price).	17	21
TOBACCO, Kentucky, &c.	6	20
Seed Leaf.	5	40
WOOL—Domestic Fleeces.	50	80
Domestic, pulled.	40	67 1/2
California, unwashed.	20	40
WALLOW.	18 1/2	23 1/2
OIL CASE—ton.	43 00	49 50
PORK—Mess, 1 barrel.	28 00	28 62 1/2
Prime, 1 barrel.	21 00	21 25
BEEF—Plain mess.	16 00	20 00
LARD, in barrels.	15 1/2	18 1/2
BUTTER—Western.	22	33
State.	23	34
CHEESE.	15	22
BEANS—1 bushel.	1 60	2 40
PEAS—Canada.	1 25	1 35
EGGS—Fresh.	32	34
POULTRY—Fowls.	16	18
Turkeys.	18	20
POTATOES—Mergers, 1 bbl.	2 50	3 00
Peach Blows, 1 barrel.	2 25	2 50
Buckeyes—New, 1 barrel.	1 50	2 00
APPLES—1 barrel.	2 00	5 50

The heavy fall of full 8 per cent. in gold since our last, reaching 129 1/2 at one time, has lessened the demand for all kinds of Produce and Merchandise, and seriously depressed prices. The inquiry for the principal Breadstuffs was quite limited through the month, neither shippers nor the home trade having been disposed to operate, in view of the steady downward tendency of gold. A rally to 130@130 1/2 has partially restored confidence among buyers, who, within a day or two, have been purchasing desirable lots of flour, wheat, corn, rye, and barley, at improving prices—the market closing rather buoyantly, on light receipts, reduced stocks, and a growing demand, especially for home use. The export trade of sound Corn has been steadily expanding, and there have been shipped from this port alone, 609,000 bushels, or 152,250 bushels a week. There has also been an increased export movement in Rye—the month's shipments of which reached 54,345 bushels, chiefly to German ports; and in Oats, the exports of which, since our last, have been 175,238 bushels, nearly all to London, where sound fodder for cattle finds a very ready market. There is increased heaviness in pork, cut meats and beef, prices favoring buyers, on a restricted business. Lard and Butter have been more active, and decidedly firmer. Cheese has been quiet, closing heavily. Cotton has been more freely offered, and has been in less request, at reduced figures. The available supply here is estimated at 235,000 bales. Wool has been unusually heavy, having been freely offered and in limited demand, at declining figures. Manufacturers have been the principal buyers. Bale Hay, and prime Hops have been actively sought after at buoyant rates. Seeds and Tobacco have been dull and heavy.

New York Live Stock Markets.

BEEF CATTLE.—The supply has been below an average, for a month past, but quite enough for the demand, which has been unusually light during the Lent season.

Like gold, the value of cattle has gradually fallen. The present rates are equivalent to 14c@17c per lb., dressed weight, for medium to first quality; a very few extras, 18c@19c; poor grades, 12c@13c. **Milk Cows** have constantly tended downward in prices. Good to extra good, \$65@90; a few fancy animals, a little higher; poor grades, from \$50 down to \$35, according to quality.

Veal Calves are beginning to arrive quite freely, and prices are weak, say 12c@13c per lb., live weight, for good, and 11c@9c for common to inferior. The new Health Board is actively at work breaking up the previously large sales of "Bobs," or calves only a few days old. **Sheep** are also abundant and lower; the fall of gold affects pelts materially. The poor and good grades sell at 6c@8c per lb., live weight, according to quality; extra good bring 8c@8 1/2c, and in a few cases, 9c.

Live Hogs are diminishing in number; only 7,000 this week. But the warm weather, and the "worm" stories afloat, lessen the demand, and affect the prices, which this week stand at 10c@10 1/2c per lb., live weight.

Plenty of Premiums Yet Remain for All

who want them, and at least two months more remain in which to secure them. Let the premium clubs already started be filled up and the premiums be called for. New lists may also be started.—"It speaks for itself," writes one who began a new club last month, "your splendid engravings, and large amount of good reading matter please everybody, and I have only to show the paper and point out what is in it, to get every one I meet with to subscribe. My \$55 premium has cost me just 18 hours time, or over \$3 an hour, and most of that in evenings."—A Bank Cashier got an \$80 premium without losing an hour. Several clergymen have obtained \$30 to \$70 premiums, in three or four days. Small boys and girls have secured hawk volumes, books, and often larger premiums, by their own effort. Many new lists have been begun and completed and the premiums received, all within the past month. April is just as favorable a time, if not more so, as the beginning spring work will lead many to seek all the help they can from a journal like this. We can not spare room to describe the premiums which are all very good, but will send a full Descriptive Sheet without charge to all who desire it.

Table of Premiums and Terms, For Volume 25. Open to all—No Competition.

Names of Premium Articles.	Price of Premium.	Names at \$100 each.	Names at \$100 each.
1—Good Books—See terms below.			
2—Garden Seeds for a Family (40 kinds).	\$5 00	14	37
3—Flower Seeds for a Family (100 kinds).	\$5 00	14	33
4—Nursery Stock (any kinds desired).	\$20 00	30	100
5—Iona Grape Vines (12 of No. 1).	\$18 00	27	92
6—Concord Grape Vines (100 of No. 1).	\$12 00	19	65
7—Japan Lilies (12 Bulbs).	\$6 00	15	38
8—Downing's Landscape Gardening.	\$50 00	96	338
9—American Encyclopedia.	\$12 00	19	65
10— Worcester's Great Illustrated Dictionary.	\$12 00	19	65
11—Any back Volume <i>Agriculturist</i> .	\$1 75	20	26
12—Any two back Volumes do.	\$3 50	20	26
13—Any Three do do do.	\$5 25	10	32
14—Any Four do do do.	\$6 50	13	38
15—Any Five do do do.	\$8 75	15	49
16—Any Six do do do.	\$10 50	17	50
17—Any Seven do do do.	\$12 25	19	57
18—Any Eight do do do.	\$14 00	21	64
19—Vols. XVI to XXIV do.	\$15 75	23	72
20—The County Election, Steel Plate Col'd.	\$10 00	18	69
21—Faint in the Woods do do.	\$10 00	18	69
22—Norton's Best No. 5 Gold Pen, Silver Case.	\$1 50	12	32
23—Best Family Clothes-Wringer.	\$10 00	18	69
24—Doty's Washing Machine.	\$12 00	19	75
25—Tca Set (Best Silver Plated).	\$30 00	67	240
26—Sewing Machine, (Wheeler & Wilson).	\$35 00	70	270
27—Sewing Machine, (Wilcox & Gibbs).	\$35 00	70	270
28—Sewing Machine, (Ellis How).	\$30 00	75	290
29—Melodeon (Best Four Octave).	\$67 00	80	300
30—Melodeon (Best Five Octave).	\$112 00	140	450
31—Piano, 7 Octave (Steinway & Sons).	\$100 00	500	1500
32—Barometer (Woodruff's Mercurial).	\$12 00	19	70
33—Barometer (Woodruff's Mercurial).	\$18 00	27	95
34—The Aquarius, or Water Thrower.	\$11 00	19	75
35—Buckeye Mowing Machine No. 2.	\$125 00	170	450
36—Allen's Patent Cylinder Plow.	\$20 50	31	100

No charge is made for packing or boxing any of the articles in this Premium List. The Premiums, 1, 2, 3, 7, 8, and 13 to 26, are DELIVERED to any part of the United States and Territories, free of all charges. The other articles cost the recipient only the freight after leaving the manufactory of each. Every article offered is new and of the very best manufacture.

* Premium 1.—Good Books.—Any person sending 25 or more subscribers, may select Books from the List on this page, to the amount of 10 cents for each subscriber sent at \$1; or to the amount of 30 cents for each name sent at the (ten) club price of \$1.25 each; or to the amount of 60 cents for each name at \$1.50. This is only for clubs of 25 or more. The Books sent by mail or express, prepaid by us

BOOKS FOR FARMERS and OTHERS.

[Any of the following books can be obtained at the Office of the *Agriculturist* at the prices named, or they will be forwarded by mail, post-paid, on receipt of the price.]

Allen's (L. F.) Rural Architecture.	\$ 1 50
Allen's (L. L.) American Farm Book.	1 50
Allen's Diseases of Domestic Animals.	1 00
American Bird Fancier.	30
American Rose Culturist.	30
American Weeds and Useful Plants.	1 75
Art of Saw Filing (Holly).	1 75
Barry's Fruit Garden.	1 75
Becher's (H. W.) Fruit, Flowers and Farming.	1 50
Bement's Pouter's Companion.	2 00
Bement's Rabbit Fancier.	20
Boston Machinist (W. Fitzgerald).	1 75
Bousingault's Rural Economy.	1 60
Bridgeman's Fruit Cultivator's Manual.	1 75
Bridgeman's Young Gardener's Assistant.	2 00
Bridgeman's Kitchen Garden Instructor.	1 50
Bridgeman's Florist's Guide.	1 75
Brandt's Age of Horses (English or German).	50
Breck's Book of Flowers.	1 50
Brown's Field Book of Manures.	1 50
Buist's Flower Garden Directory.	1 50
Buist's Family Kitchen Gardener.	1 00
Burr's Vegetables of America.	5 00
Canary Birds, paper 50 cents.	75
Carpenters and Joiners' Hand Book (Holly).	75
Chorlton's Grape-Grower's Guide.	75
Cobbett's American Gardener.	75
Cole's (S. W.) American Fruit Book.	75
Cole's Veterinarian.	75
Colman's Agriculture.	4 00
Cotton Planter's Manual (Turner).	1 50
Dadd's Modern Horse Doctor.	1 50
Dadd's (Geo. H.) American Cattle Doctor.	1 50
Dana's Muck Manual.	1 25
Dog and Gun (Hoopes).	1 50
Downing's Country Houses.	8 00
Downing's Landscape Gardening (new Edition).	6 50
Downing's Cottage Residences.	2 50
Downing's Fruits and Fruit Trees of America.	3 00
Downing's Rural Essays.	5 00
Eastwood on Cranberry.	75
Elliott's Western Fruit Grower's Guide.	1 50
Flax Culture.	1 50
French's Farm Drainage.	1 50
Field's (Thomas W.) Pear Culture.	1 25
Fish Culture.	1 25
Flint (Charles L.) on Grasses.	2 50
Flint's Milk Cows and Dairy Farming.	2 50
Flora's Intermix and Fortuna Flora (Mrs. Hall).	1 50
Fuller's Grape Culturist.	1 50
Fuller's Strawberry Cultivator.	20
Goodale's Principles of Breeding.	1 25
Gray's Manual of Botany and Lessons in one Vol.	4 00
Gray's How Plants Grow.	1 25
Guncion on Milk Cows.	1 25
Hall's (Miss) American Cookery.	1 50
Haraszthy's Grape Culture, &c.	5 00
Harris' Insects Injurious to Vegetation, plain.	4 00
Harris' Insects Injurious to Vegetation, colored plates.	5 00
Hatfield's American House Carpenter.	3 75
Herbert's Hints to Horsekeepers.	1 50
Holy's Country Scats.	4 50
Holy's Culture.	40
How to Buy a Farm and Where to Find One.	1 75
Insect Enemies of Fruit Trees, (Trimble).	8 00
Jennings on Cattle.	2 00
Jennings on Swine and Poultry.	2 00
Jennings on the Horse and his Diseases.	2 00
Johnson's Agricultural Chemistry.	1 75
Johnson's Elements of Agricultural Chemistry.	1 25
Kemp's Landscape Gardening.	2 00
Klippart's Land Drainage.	1 50
Langstroth on the Honey Bee.	2 00
London's (Downing's) Ladies' Flower Garden.	2 00
Long's How to Build Hot-houses.	1 50
Liebig's Familiar Letters on Chemistry.	50
Liebig's Natural Laws of Husbandry.	1 75
Linsley's (D. C.) Morgan Horses.	1 50
Manual of Agriculture by G. Emerson and C. L. Flint.	1 50
Mayhew's Illustrated Horse Doctor.	3 50
Mayhew's Illustrated Horse Management.	3 50
Mayhew's Practical Book-keeping for Farmers.	90
Blanks for do do.	1 20
New Clock and Watch Maker's Manual.	2 00
McMahon's American Gardener.	2 50
Miles on the Horse's foot.	1 75
Morrell's American Shepherd.	1 25
Norton's Elements of Agriculture.	1 75
Norton's Scientific Agriculture.	75
Onion Culture.	20
Our Farm of Four Acres (bound) 60c.	(paper) 30
Pardee on Strawberry Culture.	1 50
Parsons on the Rose.	1 50
Phantom Bough, or Skeleton Leaves.	2 00
Phenomena of Plant Life, (Leo. L. Grindon).	1 00
Pedder's Land Measurer.	60
Quimby's Mysteries of Bee Keeping (new.)	1 75
Rabbit Fancier.	80
Randall's Sheep Husbandry.	1 50
Randall's Fine Wool Sheep Husbandry.	1 00
Rand's Flowers for Parlor and Garden.	3 00
Richardson on the Dog.	30
Rural Affairs, (bound) 4 Vols. each.	1 50
Rural Annual (by Joseph Harris).	25
Rural Register (by J. J. Thomas).	70
Saunders's Domestic Poultry, paper, 80 cts., bound.	60
Saxton's Farmers' Library, set of 3 Vols. morocco.	9 50
Saxton's Farmers' Library, set of 3 Vols. cloth.	8 50
Scheuch's Gardener's Text Book.	75
Shepherd's own Book.	2 25
Sillaway's Modern Carpentry.	2 00
Skiffill Housewife.	75
Stewart's (John) Stable Book.	1 50
Ten Acres Enorm.	1 50
Tenny's Natural History and Zoology.	3 00
The Great West.	1 00
Thompson's Food of Animals.	1 00
Tobacco Culture.	25
Todd's (S. E.) Young Farmer's Manual.	1 50
Van's Villas and Villas.	3 00
Villas and Farm Cottages, (Cleveland and Backus).	4 00
Warder's Hedges and Evergreens.	1 50
Watson's American Home Garden.	2 00
Wax Flowers (Art of Making).	2 00
Wet Days at Edgewood.	1 75
Wetherell on the Manufacture of Vinegar.	1 50
White Plant (John Klippart).	1 50
Woodward's Country Homes.	1 50
Woodward's Graperies.	1 50
Yonatt and Spooner on the Horse.	1 50
Yonatt and Martin on Cattle.	1 50
Yonatt on the Hog.	1 50
Yonatt on Sheep.	1 50
Yonatt's House and Science.	2 25
Yonatt's New Chemistry.	2 00



Containing a great variety of items, including many good Hints and Suggestions which we throw into small type and condensed form, for want of space elsewhere.

FORTY-FOUR PAGES!—The pressure upon our columns, compels us to issue 44 pages, instead of the regular 32; and with the good advertisements and good reading matter still left over, we would gladly have made it 48 pages, only that it would increase the weight to double postage, and make trouble with all who pay postage by the year. The weight is still not above the 4 ounces, and no one has a legal right to charge over 3 cents per quarter postage. This increase of advertisements enables us to give sixteen extra columns of reading matter, which our subscribers will appreciate.

Erratum.—By an error in printing, in a few one of the first copies of this number, some of the page-figures are wrong on one side of the middle sheet.

Over One Hundred Thousand!

The first regular edition of this number, printed for subscribers, will exceed One Hundred Thousand copies; and we shall continue on printing further editions from the electrotype plates, so long as needed. The number of subscribers received up to this time, exceeds the receipts of the same date last year, by 27,500; which indicates a total of over 125,000 for this year. This large increase and the enlarged size, have prevented the prompt mailing of all the copies so early as formerly; but this difficulty will be remedied next month, by the addition of more presses—so that we shall be able to accommodate all who may come, up to half a million, if necessary. By the way, a subscriber informs us that his paper is regularly loaned around, so that twenty-three persons actually read every number, and that it thus gets about worn out. This is the case in a less degree, generally, so that our readers really amount to a full million!

An Excellent Assortment of selected business items, conveying much useful information, will be found in our advertising pages. We only regret being compelled to leave out several other good advertisements that came in after our pages were full. We believe it will pay every reader to look all through the advertising pages, and see what is offered, at what prices, and by whom. As remarked last month, "business men seem to understand where they can find an immense number of wide-awake, enterprising readers. Please return their compliment, when writing for circulars or catalogues, or sending orders to them, by letting them know when and where their advertisements were seen."

Read the "Hints about Work."

At the present season we have such a flood of queries that, though we have given a large space to Basket matter, it is impossible to reply to a fourth of the questions individually. In making up the Hints about Work, we endeavor to meet as many of these questions as possible, and this month a number of letters are there answered.

Humbugs—Seventy Swindling Concerns!—Since our broadside upon humbugs last month, letters have continued to pour in from all parts of the country, mostly from those describing frauds upon themselves or their neighbors. The extent to which these operations are now carried, would astonish any one who had not previously looked into the subject. We have just been over a package of 214 of the last letters received, and in these alone find over seventy different concerns referred to, many of them run by the same operators, under different names. These letters came from all parts of the country. As this journal goes to nearly every Post Office in the whole country, we hope the attention thus called to the subject, may be of extensive influence. Let every reader talk the matter over in his town, and especially with his postmaster; and this will do something to put people on their guard.

This week, we have visited several of these swindling offices, in the guise of a green countryman seeking to collect some of the numerous "prizes" called for by tickets sent to us; and the immense business we have seen doing, up in these attic rooms, was astonishing even to our experienced eyes. The "business" consisted mainly of sending out circulars, and opening great stacks of letters containing remittances of \$1, or \$2, or \$5.15, or \$5.24, or \$10, etc., etc. We saw no "prizes" going out, and but few on hand anywhere to send out. In three places alone there were eleven men directing envelopes and enclosing circulars, and there were at least fifty thousand of these circulars piled up ready to be forward-

ed. In two places the chief man, or "head center," was "out," but would be in soon, and our tickets could not "draw" until said boss came in—the story always told to callers. At another place, a "splendid hunting-case watch, marked \$50," our ticket called for, was shown, but \$5 would not fetch it—we must pay \$3.75 for the tickets. As we could get plenty of such watches at \$3 a piece, we saved our \$8.75.... We visited an up-Broadway depository of merchants and others (so-called), with a million or less "gifts" to be distributed. From the description sent out, this should be one of the most splendid establishments on the whole street; we found, in the basement, only a contemptible "gift shop," like the one "looked into" last month (p. 86, last column), but with more silver-covered lead ware. See about "Plated Ware," on pp. 147-148 of this paper.

Had we time and room we could give a dozen pages of descriptions of the fifty odd swindling concerns in this city. Nassau street, and certain parts of Broadway abound in them—the lotteries, the (brass) gold pens and jewelry, the pianos and melodeons sold at \$2 each, the cheap valueless photographic apparatus, the prize packages, the cigar machines, the cheap, or rather low-priced sewing machines, etc., etc. There are plenty of similar concerns in other cities and towns. The misdirected express parcel humbug is run by J. C. Smalley, at Hope, N. J.; and by others elsewhere. Here and elsewhere are Eye Doctors, offers of great wages to Agents, Love Perfumeries, Journal of Medical Science, Magic Monitor, Paris Lotteries, etc., etc. "Albert Hall & Co." (no place) ask \$10 through the mail for a sewing machine sold by others for \$5.... We judge by what we have seen, that tens of thousands of circulars are sent out daily as letters. Most of these parties make no return for money received by mail. When found, and called on personally, they furnish something; but in the numerous applications with the "prize tickets," we could not find a single thing worth the money asked.

A few hints is all we now have room for. There is not an article of gold or silver to be bought in this city at less than its coin value. The great failures described in so many of the circulars, have nowhere occurred. Believe no statement, however plausible and well told, that comes to you by circular through the mail. There is not a single gift enterprise that is not directly or indirectly a swindle. The fellows that advertise obscene books, instruments, or medicines, are, without exception, swindlers. Every watch or similar thing offered to be sent by mail, is not worth sending for, even if you are sure to get it, which, in nine cases out of ten, you will not. Most of these parties, on being followed up, pretend that the money sent them has been lost by mail. We know that there is not a single establishment in the country that offer articles or money for distribution by tickets, that is not a downright cheat.

A Petroleum and Land Advertisement

is for the first time admitted to these columns, though many thousands of dollars worth of "Oil Company" advertisements have been previously offered and rejected. This is done now, not so much for the pay it brings, (plenty of other good advertisements were ready to fill the same space,) but because we had become sufficiently impressed with the prospects of the Reno Company, to make a small investment of our own; and we could not well refuse to place the matter before our readers, that they may also investigate, and if they then desire to do so, they can also take an interest. Our own inducements to subscribe were derived from what we learn of the character of the parties interested, and from the large profits that may be derived from the small sum actually risked in the investment. Should the enterprise not prove as profitable as it promises, and we wish to withdraw the money, the utmost loss on \$1000 will be \$50, and the interest of the money until withdrawn. So it looks to us, but we do not urge any one to see with our eyes.

Special to Advertisers.

—As we are so far into the volume as to be able to know about the regular circulation, the advertising rates are now fixed for the rest of this year (see headings of Advertising pages). The minimum terms are based upon one cent per line for each thousand readers; that is to say, it costs only about \$1 to place an advertisement of 100 lines, or 7½ inches, before each full thousand of our readers. A consultation with any printer will show that separate cards of a few lines, or even of a whole page in size, would cost more than the same number of cards printed in this journal, where they are fixed and sent out, one to a family, while the loose cards could only be distributed at great extra expense, and a large proportion of them would be lost.—In a journal of this kind, the advertising cards are before the reader at least a month, while many thousands of volumes are preserved for permanent reference. With the care exercised in admitting advertisements, as noted below, they have a peculiar value in the *Agriculturist*. All things considered, this journal is un-

doubtedly by far the *cheapest* medium of advertising anywhere to be found, even at our highest rates. The circulation certainly exceeds that of any other journal in this country, if not in the world, except perhaps the N. Y. Ledger, and that admits no advertisements.—So well is this understood by our oldest advertising patrons, that they continue year after year to be our largest customers. Several of these, who had engaged space for the first five or six numbers of this year, have withdrawn their cards from the present number, simply because they have already sold the whole stock they had provided for the entire spring trade.—So much for the value of these columns to advertisers; and to secure these advantages, we require something more of them than mere pay for space. Advertisers unknown to the editors personally, or by good repute, must furnish good references or other evidence that they are reliable—that they have both the *disposition and ability to do just what they promise*. Our aim is, to admit no advertiser to whom we would not ourselves unhesitatingly send money or orders, if we chanced to want what he advertises, and at the price asked. No patent medicines, or secret remedies are admitted, and no advertisement deceptive either in form or substance. By living up to these requirements, we aim to make the advertising pages very valuable to the reader, as well as to the advertiser.

The Officers of the Cattle Breeder's Association

for the current year, 1866, are: President: E. H. Hyde, Stafford, Conn. Vice Presidents: J. F. Anderson, South Windham, Me.; J. O. Sheldon, Geneva, N. Y.; Burdett Loomis, Suffield, Conn.; J. W. Freeman, Troy, N. Y.; E. D. Pearce, East Providence, R. I. Secretary and Treasurer: J. S. Allen, East Windsor, Ct.

The Committees on Pedigrees and Stock Registry are as follows: On Shorthorns: S. W. Buffum, Winchester, N. H.; S. W. Bartlett, East Windsor, Conn.; P. Sledman, Chicopee, Mass.... On Devons: H. M. Sessions, South Wilbraham, Mass.; E. H. Andrews, Waterbury, Conn.; E. H. Hyde, 2d, Stafford, Conn.... On Ayrshires and Herefords: George B. Loring, Salem, Mass.; Thomas E. Hatch, Keene, N. H.; W. Birnie, Springfield, Ms.... Alderneys: John Brooks, Princeton, Ms.; C. L. Hayes, Unadilla, N. Y.; Jonathan Forbush, Bolton, Ms.

The Committee on Devons commence a new volume of the Amer. Devon Herd-book, for which they are now receiving pedigrees. Those wishing these recorded, should apply to the President, or Chairman of this Com.

Wall-Builder and Stump-Puller.

—Mr. Packer, of Mystic, Conn., in working among the rocks of New London County, found the necessity for a machine to lift heavy rocks, transport them, and deposit them in walls, or wherever needed. So he invented one, —a pair of shears, on strong wheels, held apart by two powerful curved reaches, giving room for a stone to be swung high between them. For a wall layer, when large stones, say from 1 to 10 tons, are to be moved, it is doubtless an excellent thing, and has done first rate work in New London County. As a stump-puller, it must demonstrate its own excellence.

Rivers' Miniature Fruit Garden.

—We have in press a reprint of this charming little book on the garden culture of Fruit Trees. Ready early in April. Price 75 cents.

Garden Manures.

—J. Haines, Tazewell Co., Ill., wishes to know what to put on a sandy garden. Muck, composted with lime or ashes, is one of the best applications to a soil of this kind. Gas lime is not safe to use until it has been long exposed.... D. B. Graves, Clinton Co., Pa. There is much difference of opinion as to the value of salt as a manure; but it is used with apparent benefit on Asparagus, Cabbages, Beets, and such plants as naturally grow near the sea, at the rate of five or more bushels to the acre.

Plants Named.

—J. M. Shaw, of — Co., Maine. No. 1 is the common Crab-grass, *Panicum Sanguinale*. No. 2 is a Beard-grass, *Andropogon furcatus*. W. Mand, Mill Co., Wis. The specimens appear to be unusual forms of the Red Cedar, which, when young, has long and sharp leaves; and it is not unusual to find on old trees limbs which bear leaves quite different from those on the rest of the tree.... "Subscriber," Auburn-dale, Pa. The grass from the North of Italy is the Feather grass, *Stipa pennata*. It is hardy in the gardens around New York. The seed is sold at the seed-stores, but it requires heat to start it. The plant is perennial.... Israel Sanborn. The seeds sent as Japanese Wheat are evidently of something closely allied to Sorghum, Guinea Corn, etc. We cannot tell precisely what, from the cleaned grain. A whole fully grown, but not over-ripe, cluster or head is needed to determine it. "K." The leaves probably of Tree Housleek, *Sempervivum arboreum*; it needs to be quite old to flower.

Fertilizer for Lawns.—One bushel gypsum, two bushels ashes, one bushel fine bonedust (sifted). Sow about one peck of the mixture to the square rod.

Compost for Corn in the Hill.—Take hen manure 1 bbl., bonedust 1 bu., dry muck 2 bbls., chamber-ley 3 pailsful. Soften the dry hen manure with the urine, and mash the lumps—then mix thoroughly with the bone and muck; 1 handful to the hill. Worth more than best poudrette. Good also for any root crops.

Compost for Common Garden Crops.—For surface dressing, to be raked in after thorough manuring. Hen manure one bushel, mix with chamber-ley or stable liquor, and soften, add half a bushel plaster and half a bushel ashes, mix intimately, adding at the same time one bushel of good soil or fine muck. Use within three days, or add 2 bushels more of muck.

Fertilizer for Potatoes in the Drill.—Bone-dust or good bone meal, mixed with oil of vitriol, $\frac{1}{2}$ water, and well stirred three days, then dried with leached ashes and muck, equal parts. The proportions being about one bushel bone, ten pounds acid, twenty pounds water, one-half bushel ashes, and one-half bushel dry muck. This preparation is good also for corn.

Quick Acting Composts.—"J. D. B.," Summit Co., Ohio, and others. Materials are within easy reach of most people that, judiciously compounded, will make first-rate fertilizers for the garden, for field crops in the hill, for the lawn or for top-dressing mowing-lands or grain. There are some which every one has on his own place; others he must buy. Almost any man this side of the Grand Prairie can afford to pay for good hardwood ashes as many cents a bushel as hay is worth dollars a ton. There are other things, like gypsum and lime, that it will always pay to have on hand. Soapsuds, chamber-lev, and many articles of household waste, are often lost, which might, if collected, make many dollars worth of rich fertilizers in the course of the year. See other items for several recipes for cheap composts, which are not specific, but good for the uses suggested.

Substitute for Swamp Muck.—Swamp muck, or peat, so far decomposed as to fall to powder, is one of the most useful articles about a farm or garden to save and increase the value of the manure, form part of composts, or the chief bulk of stable manure, being used instead of litter to a great extent, and to prevent burning in the mass, and to absorb all liquids. A very good substitute may be made by throwing sods from the road sides or fence-rows together, spreading upon them about one bushel of slacked lime to the cubic yard.

A Seed Drill.—Several inquire about a seed drill. We have tried the Wethersfield, and found it quite satisfactory. It will sow anything from turnip seed up to beans. We have seen no better ones in use.

Orion on Beets.—A very good article is offered in the dialogue form, an attractive one—but it takes two or three times the space of a succinct account of the matter. We should be glad of more concentrated articles.

"The Deep Arcana of Facts."—Congress called for a report from the Commissioner of Agriculture—a "statement in detail" of the disbursements and expenditures of the Department of Agriculture. We are indebted to the Hon. Mr. Washburn for a copy of the official document. We find a great many figures, and get some insight into how the money goes, though not in all cases a very clear one. Of course the report closes with the usual amount of self-laudation, which, if it were expressed in good taste, might be endured, but when we learn from the Commissioner that certain labor of the department opens "the deep arcana of facts," we turn for relief from the literary portion of the report to the figures, which, if not poetical and "hifalutin," are at least suggestive. In perusing these many columns, we are struck with the wonderful amount of horse hire, and are tempted to add up how much it costs to "run" the department in this way. Aside from buying a pair of horses for \$225, we find for horse hire and horse-keeping in a little over 3 years, \$3,428.00, and this is so lumped in sums ranging from \$3.00 to \$400, that we are at a loss to know which is cheapest—to keep a horse or hire one. Surely the Department might give us some statistics on this point. This report is very great on little things, but very unsatisfactory on large ones. Every individual man and woman who has received \$3 or upwards, for making seed bags, is put down in full with the amount, and we are told distinctly who gets the money; but when it comes to the large sums, all is lumped, and we find that "Isaac Newton *et al.*" are down

for thousands. Perhaps the people will like to know who *et al.* are, and we are quite sure that some of the "watch dogs of the treasury" will look into the matter. Then we find Isaac Newton, Jr., *et al.* were paid \$4000 in one year. We are glad to know that there is an Isaac Jr., and that he has an *et al.*, and that they get well paid. There are more interesting items which we must reserve for another time, such as where the seeds come from, how much is paid for the long drawn articles in the so-called reports, what it costs to write a preface to one of those precious volumes, etc. etc.

Staking Trees.—When young trees have the proper balance of root and top, there is seldom need of staking them except in very exposed places. But there are cases in which it is necessary to do it, especially where large trees are moved. Two firm stakes are

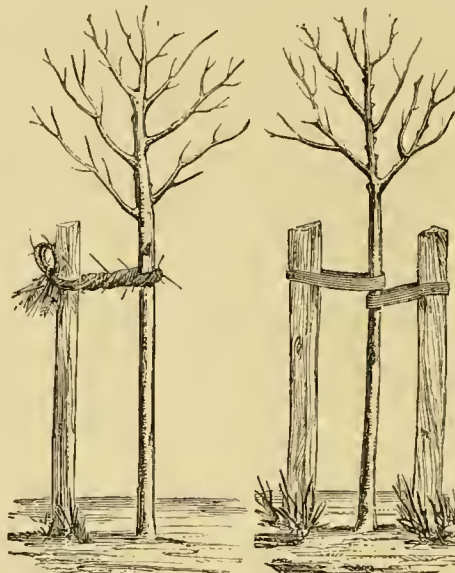


Fig. 1.

Fig. 2.

placed opposite each other in the direction of the prevailing winds, and about a foot from the trunk of the tree, or one stake only may be used. The figures show two methods of securing the tree. In figure 1, a straw rope is put around the tree, twisted until it reaches the stake, and then passed around it, and fastened by a nail. In figure 2, the tree is kept in place by two straps of leather or stout canvas, which are secured to the stakes by nails.

Phenomena of Plant Life.—A neat little volume, published by Nichols & Noyes, Boston, and containing a series of popular essays by Geo. H. Grindon, of Manchester, England. When we take up a book of this kind we feel pretty sure of being bored. Essayists and preachers are generally careless as to their science; but here is a writer who can present the phenomena of plant life in its moral and æsthetic aspects, without violating scientific accuracy, or being tediously preachy. We do not quite agree with the author's description of the embryo; but he is, withal, so genial and so readable that we are not disposed to find fault with him, and we commend the book as one that can not fail to please the thoughtful reader. Handsomely bound in beveled boards, 94 pages. Price \$1, by mail.

Book on "Land Drainage," by John H. Klippart. We have recently placed this book on our list, and can recommend it to our readers. Those who already have the work of Judge French on the same subject will find this, in some degree, a new presentation of the same facts and conclusions, but besides containing much that is of especial value, not touched upon in that. The Secretary of the Ohio Board of Agriculture adapts his work especially to the wants of the Western farmer, while the Judge views his subject more from a more Eastern stand-point. Price, \$1.50.

The American House Carpenter, by R. C. Hatfield, is a new book upon our list. It treats of the principles of carpentry, and is calculated to supply a want which our correspondence indicates is felt by many of the readers of the *Agriculturist*. The work will be valued, we think, by every carpenter who makes a study of his trade, as the mathematics of architecture are made simple; and with the aid of tables and very numerous diagrams and illustrations, strength of materials, framing, drawing and shadows, practical geometry, and the principles of architecture are ably discussed. An appendix contains numerous convenient tables and a glossary. Sent by mail, post-paid, for the price, \$3.50.

Turner's Cotton Planter's Manual.

—In answer to inquiries for works on cotton growing, we wish we were able to recommend a better book than this. But as this is the only work, as far as we know, on the subject, we keep it in print to supply the demand. It is a compilation of essays by different well known Southern authors, and it contains much useful information, good, as it is, but would be more available were it more systematically arranged. Price \$1.50, by mail.

Boussingault's Rural Economy.

This is not, as its title might imply, a handbook of directions for the management of rural affairs, but a discussion of the principles involved in agricultural operations. Its author is one of the first chemists France has produced, and this work embodies his views of chemistry as applied to agriculture. It is a work which should find a place in the libraries of agricultural societies and clubs, as well as in private collections of the best works on agriculture.

Grape Culture in Steuben Co.

—Our notice of the essay by the Hon. Goldsmith Denniston, has called out so many inquiries for it, that we have procured a number of copies, and can supply them at 40c. post-paid. It is a neat pamphlet of 24 pages, with maps of the famous grape localities, and illustrations of the methods of pruning followed in one of the noted grape regions of the country.

Farm Book-Keeping.

—There are a number of rather expensive forms of farm account-books which are offered to farmers. All that we have seen contain some good ideas; but to give a plain, straightforward knowledge of business ways, and to lead the farmer into keeping accurate Debt and Credit accounts with himself, his farm, his animals, and those with whom he deals, we really know of no better guide than *Mayhew's Practical Book-Keeping*, with the accompanying *Sample Account Books*. It is calculated for the use of schools, but needs no explanation. We would be glad to be instrumental in placing it in the hands of every farmer's boy in the land. Price of the volume, 90c.; of the set of account books, \$1.20.—Sent post-paid.

A Good Story.

—"Luke Darrell, the Chicago Newsboy," advertised in our columns, is a live, wide awake story, which will lead boys to love truth, courage, and manliness. The young will be quite sure to read it, if it comes within their reach. We can forward it post-paid on receipt of price, \$1.50.

Breck's New Book of Flowers.

Breck's Book of Flowers has long been a standard work on floriculture. The author having for the most part re-written it, it is now called the *New Book of Flowers*. It describes all the favorite annual, biennial, and perennial, plants of the garden, as well as the flowering shrubs. Its chief value consists in its giving the experience of the author, who is well known as one of our most successful and devoted cultivators of flowers. Aside from its practical directions, there is an amount of quaint gossip about plants, and personal reminiscences, that make it a very readable, as well as useful, book. Ready in April. \$1.50.

Field's Pear Culture.

—Manuals upon specialties are rapidly taking the place of large volumes upon general culture. This manual upon the pear commands itself to pear growers only, and its scope is modestly set forth in the author's own words: "Its design is to answer in a clear and intelligible manner, the oft repeated questions of the novice: 'What kind of Pear Trees can I plant most profitably?—and how shall I treat them, to insure a return of the investment?'" \$1.25.

Cow Milker.

—To several inquiries we answer, that we have no evidence that any machine for milking cows has ever been tried and given satisfaction. The one advertised last month may be the best of them, but we have no evidence about this that will establish its claims to favor. Until satisfied of its real value, we can not give it the endorsement of further admission to our advertising columns.

Dog and Moon.

—Judge Oliu, of Vermont, being badgered at a dinner by a young sprig of the Law, made no reply. A friend asked why he did not squelch him. The Judge simply responded, that, "In his neighborhood, there used to be a little dog that would sit for hours and bark at the moon"—and resumed his eating. "Well, Judge," resumed his friend presently, "what about the dog and moon?" "Oh," said the Judge, "*the moon kept on!*" We commend this incident to one or two captious cotemporaries, who cavil at very small matters, and wonder why the *Agriculturist* does not stop to bandy words with them.—Advertising, \$2 a line.

Wheat from California.—A correspondent of the *American Agriculturist*, James Cass of Lagdon Valley, California, sends us a sample of wheat which he has raised for eight years, and wishes us to tell him its true name. He discovered a few heads of it growing in one of his fields, and carefully saved the seed. On cultivation, it proved to be much affected with smut, but with him, as with us, blue vitriol (sulphate of copper) proved a perfect preventive. He has raised as much as eighty bushels per acre. Straw tall and stiff; berry long, not very plump, thin skin, and uncommonly white and handsome. Has obtained 42 lbs. of excellent flour from a bushel of wheat. We do not know the variety. If he will send us three or four lbs. by mail in time for sowing the coming fall, we will give it a trial, and can then tell something about it. The postage is only eight cents a pound.

Drilled Wheat vs. Broadcast.—J. C. tried the experiment of drilling in his seed wheat, vs. sowing broadcast. At first, the drilled wheat looked much the best, but at harvest the broadcast came out far ahead. This is sometimes the case, but in four cases out of five, drilling is the better practice. It saves seed, deposits it more evenly, and at uniform depth, and in a dry autumn you can put the seed down into the moist earth, whereas if sown broadcast, much of it will remain in the dry surface soil, and will not germinate until it rains.

Hoe the Wheat.—To admit of which it must be drilled. We ought to have a machine to do this, but until we have, we should hoe the weedy portions by hand. It will pay in many cases. It is not so much work as many imagine. Try an acre this spring, as early as the ground is dry enough to work well, but not before. Many farmers spend more time in pulling up red-root when it is in flower, and after it has robbed the wheat of much nutriment, than would suffice to hoe over the whole surface in the spring. In many cases a light harrow will destroy the weeds among the wheat, and at all events will stir the soil and favor the growth of the crop. One need not be afraid of the harrow, even if a heavy one, injuring the wheat, if the ground is dry. It may pull up a plant here and there, and to a casual observer the wheat will appear badly cut up, but it soon revives.

Broom Corn.—Considerable interest is manifested in regard to this crop by numerous correspondents. We propose to give it more attention in the May number, and now only say, that it does well on swards turned over last fall, and on grass land broken up in the spring, if the soil is rich, and the furrows flat, and it can be manured in the hill. It thrives on any good corn land, but pines on wet soil, or on heavy clays.

Vetches or Tares.—D. F. Spaulding, Iowa. The "Vikker," as you write it, which the Germans and Scandinavians in your neighborhood talk about, is the Vetch.—Wicke in the German language. Vicker in Swedish. The plant has been cultivated to some extent in this country, but without marked success. It is of a nature, agriculturally, between peas and clover, an annual crop, good for hay, delighting in deep clayey loams in good tilth. There are both spring and autumn varieties, and they ought to have a good trial in this country. It does not thrive in very dry localities, nor on sandy soils. The seed may probably be got of our seed importers, or they will get some out for you for next autumn's or spring's sowing, if you wish.

About Fine Bone Dust.—A Caution.

To several recent inquiries, we answer: Bones are undoubtedly a very valuable fertilizer. For fruit trees and vines, the whole bones, or those coarsely broken, decompose slowly and afford nourishment as needed, over a long series of years. A little fine bone dust added, is well, to produce immediate effects, while the larger pieces are getting into a state of decomposition. For immediate effect upon crops, the finer the bones are powdered the better. The fine bone dust which has been long in use, is largely decomposed and used during the growth of any crop. The claim that bones ground to flour, are worth twice as much as the fine ground bones, is hardly tenable. Suppose we invest one sum in one ton of flour of bones, and as much more in two tons of the simply fine ground bones. In the former, we get most of the effect immediately; in the latter, we get the early benefit of say a ton of the finest portions, and still have left a ton of the coarser portion for further future effect in the soil.—Some two years ago we examined a sample of fine ground bones, sold in the market, and found a large per centage of plaster so intimately mixed as not to be recognized without careful inspection. We caution our readers to be on the lookout for such frauds on the part of manufacturers, and especially of unscrupulous sellers, who can easily adul-

terate the originally pure article. The finer the bone, the greater the chance for deception. The fraud can usually be detected with a strong magnifying glass, by the form of the fine particles. By stirring a quantity of it in water, the heavier plaster will settle first to the bottom, where it can be easily seen. Plaster is easily detected by burning a little of the material, dissolving the ashes in a pure hydro-chloric (muriatic) acid, and adding a solution of nitrate of baryta. A heavy precipitate of sulphate of baryta, in the form of a white powder, (or sediment,) which is insoluble either in acids or in much water, would show the presence of plaster (sulphate of lime, in the bone powder.

Testing Soil for Lime.—A gentleman describes to us a process, by which he proposes to test a soil for lime, to see whether it would be benefited or not by the application. For his information we would state, that the soil might be half lime-stone, and one would not discover it by his test. The point we would make, however, is, that a little knowledge is a dangerous thing, and any chemical test, which a farmer, who is not a chemist, might apply, would be likely to mislead. Besides, the soils most benefited by lime, often have an abundance of lime in them for the use of plants, as great benefit frequently comes from the action of the lime in its freshly slacked state, in promoting decompositions and solutions of plant food in the soil, and in its changing more or less the mechanical character of the soil.

Sorghum Sugar.—The culture of Sorghum is making advances now-a-days, and there is really some prospect, that a marketable article of brown sugar will be produced. It seems from statements brought out by the comparison of views and practice at the recent Sorghum Conventions, that the early cut, even unripe canes, yield the most cane sugar with great uniformity. Improvements in evaporating and in drying the sugar are introduced or suggested also, of which we shall endeavor to keep our readers informed.

Let the Horses Rest Occasionally.

—We know a physician, in large practice, who is frequently compelled to drive his horses hard. He formerly drove the two together, and used them up in a few years. He now drives them singly, and as far as possible on alternate days. They are now, though working harder, invariably healthy and strong. He attributes this to the fact that if a hard drive strains any of the muscles, they have time to regain their tone the next day. Were the horses driven every day, a slight sprain would produce a little stiffness; the parts would rub against each other; inflammation would set in, and the horse be lame—perhaps incurably so. Farm horses are not so liable to injury in this respect, as those driven fast over hard roads. But a day's rest occasionally will help them materially. At all events do not work them Sundays. Or if any are driven far to church, or for any pressing emergency, make it a rule and adhere to it scrupulously, to let such horses rest Saturdays, or Mondays. Man and beast must rest one day in seven, or pay the penalty. Better work harder and rest longer.

Every One should "Insure his Life."

—There is an unwarrantable prejudice on the part of some persons in respect to Life Insurance. The practical operation of all good companies amounts to this: A thousand or ten thousand persons, more or less—the more the better—unite together, and say that, as all our lives are uncertain, we will each contribute annually a small sum to a general fund, to be drawn upon by the family of the first one taken away by death, then by the next, and so on—in proportion to what each has subscribed. The small sums thus gathered, form a large fund which is constantly increased by being placed securely on interest. By long extended observation, it is known to a certainty what will be the average length of life of the whole company, and how much must be annually contributed to secure \$1,000, more or less, to every one of the company, at the time of his death. A very small additional sum furnishes funds to pay a few officers or managers, and to have a little surplus against emergencies. So safe are the calculations, and so well have such companies been always managed, that they have been the most substantial of all joint companies formed in this or any other country.—We esteem it the duty of every man having a family, or creditors, likely to be affected pecuniarily by his death, to have at least a small sum of ready money sure to come to them at his decease. He may be independent to-day, but riches often take to themselves wings and fly away. Every month's observation shows that the best established properties may become involved, if not by the want of judicious care on the part of the proprietor, at least through the rascality of others. A millionaire of our acquaintance went to bed last night assured of a million and a half dollars, in good U. S. securities, in his strong safe box. To-day we learn that

the thief's hand has spirited them all away.—The farmer has his land nearly paid for. He dies, and the confusion of his affairs, or the want of good management on the part of his family, or successors, may involve the loss of the whole; while a few hundred, or a few thousand dollars of ready money at his death, may save a homestead for them, free from incumbrance. And so of every other calling. That a man is strong, and belongs to a long-lived family, gives him no certain tenure of life. The weak or sickly are likely to take most care of themselves, and thus prolong life. We always think of the operations of death, as those of an enemy who stands at a distance, and shoots a poisoned arrow at random into a large crowd. It is as likely to strike the young as the old, the strong as the weak. It is well therefore for every one to be always ready for the fatal shaft, both as respects this world and the next.—We believe a Life Policy really tends to "insure" and prolong life. Thus: A man is sick, and the anxiety of mind, as to how he will leave his family, aggravates his disease, and often does shorten a life, which would have been saved could the man have rested easy in the feeling that his insurance policy would place his worldly affairs in a safe position in the event of his death. So, we say, let every man devote a small sum annually to securing a convenient safe guard to his family or others, in the event of his death.—We write as we have long practiced, and not in the interest of any company. (We chance to be insured in three different ones.) Several good companies are from time to time admitted to our advertising columns. Sent for their circulars and statements, which are furnished free, and give full particulars, and then choose the one most in accordance with your views. They are all of them safe, and differ but little in the ends to be secured. The larger the company, the less is the percentage for expenses, and the less their liability to fluctuations in their operations; and the chance loss of a large amount by pestilence or otherwise, will tell less upon the aggregate.

The Death of George M. Beeler.—

Just as we are closing up this paper the sad news comes to us of the death of the Secretary of the Indiana Horticultural Society, Mr. George M. Beeler. Though only in his 25th year, Mr. B. was well known, not only in his own State, as a nurseryman and orchardist, but to the pomologists of the country for his devotion to their pursuits. A friend who knew him well, writes: "Modest and unassuming, but, from his merits, put forward prominently among his fellows,—Secretary of the State and County Horticultural Societies since their organization, and always devoted to their interests,—liberal, and anxiously seeking information everywhere, he attended other societies, both East and West, and thus became widely known among horticulturists, by whom he was everywhere considered the rising man. Young as he was, his opinions upon all practical points were highly valued. He died as he had lived—at peace with all, and with an abiding Christian hope and confidence."

Osage Orange Seed.—Now that this long wanted seed is again offered for sale, we have questions as to how to sprout it, and if it is to be planted in place, where the hedge is to stand. It should be frozen before sowing; but as it is now too late to do that, the seed must be soaked. Pour scalding water, as hot as the hand can bear, over the seed, and let the whole stand in a warm place, repeating the operation every day for five days. Then drain off the water, and keep the seeds covered in a shallow vessel in a warm room until they begin to sprout, when they may be sown. As the plants are liable to be thrown out by the first winter's frosts, it is necessary to raise the plants in a nursery. Rich land in fine tilth is marked out with drills, about two feet apart, or wide enough to work with the cultivator; sow the seed thinly, about an inch apart, and cover two inches deep. Keep carefully cultivated the whole season. Warder's Hedges and Evergreens—see Book List—gives the various methods of forming hedges.

Honey Locust Seed.—We know that this plant, properly cut back, will make a good hedge. It is objected to it that it is naturally a tree, and cannot be cramped into a hedge plant. So is the Osage Orange, and so is the Hawthorn. It is useless to look for a plant that will make a hedge of itself. Even the Beech may be grown as a hedge, if properly clipped. The seed of Honey Locust will often grow without preparation, but as seed is bought at the stores it is safest to scald it before sowing. It is best sown in nursery drills, when the soil is warm—about the time for planting corn.

Laurel Poisoning Again.—"C.," Richmond, R. I., gives to a lamb five or ten teaspoonfuls, and to a full-grown sheep two to four ounces of salts, (poison, we suppose,) dissolved in new milk. If the pain does not appear to subside in a reasonable time, he repeats it. He thinks if the poison is not thrown off from the stomach it must be removed by moving the bowels.

How to milk.—John K. Busted, a milker of 25 years' experience, says he always milks his cows in the same order, and that is the order of their calving, so that each cow knows her turn. He wipes the teats off with dry hands, and taking hold X-fashion, milks two teats dry; then takes the others—always keeps his hands dry, and never has any trouble about the cows holding up their milk. He thinks the practice of changing from one cow to another (or from one pair of teats to the other), gets both milker and cows in bad habits....E. Doble practises very much in the same way, never changing his hands to the other teats before the first two are milked dry, except in stripping....The philosophy of this practice seems to be that as the cow gets no relief or but little before the second pair of teats is partly milked, until that time at least, she will not withhold her milk.

Feeding young Calves is attended with some difficulty, because they will knock over the pail unless it is held. Mr. M. Hester, Huron Co., Ohio, has pieces of hollow logs, cut one foot long, into which he sets the pails firmly about half way.—A good idea.

Long Cut Feed better than Short.

A correspondent reasons as follows: When a boy, we were taught to cut straw and hay for horses as short as possible, and the reason assigned was, that horses would eat it sooner, and with greater avidity. In after life, we observed that it was not so good for the horses. Straw and hay cut one inch long, for animals that do not chew the cud, is far better than if cut to one-fourth inch. When straw is cut very short, much of it goes into the stomach without being crushed. For this reason, a great deal of it does not digest, though the juices of the stomach would have dissolved it, had it been properly masticated. When a horse begins to eat, the salivary glands send a stream of saliva into the animal's mouth, to moisten and soften the feed and to prepare it for more easy digestion. Therefore it is important that every piece of straw or hay should be crushed and macerated between the teeth, and the saliva thoroughly mingled with whatever is eaten before it is swallowed. As saliva is a powerful solvent, the organic structure of all feed should be broken up by the teeth, and the saliva and all the small fragments brought in contact with the liquid.

Feed Sheep Regularly.

—“Sheppard,” writing from Berlin Heights, Ohio, truly says: “We who have the care of domestic animals, cannot be too particular with them, especially in regard to set times of feeding.” He adds: “Let any one who has had no regular time for feeding sheep, now commence, and see if there will not be at once an improvement in the disposition and condition of the flock. Regularity of feeding sheep is an essential point in keeping them in a thriving condition, but one which is overlooked or unheeded by many. Sheep fed at irregular times know not when to expect their food, they therefore wander about and are uneasy, not quiet and peaceable as they should be and will be if treated in the right way, and fed mornning and evening a perfectly regular hour.

How Crows Kill Lambs.

—Mr. L. P. Maynard, an old farmer, says: He was living on Fisher's Island (in Long Island Sound off New London) some 25 years since, and often found young lambs dead, all of them with their eyes out, and could not account for it, but supposed the eyes were picked by the crows after the lamb had died. One day, however, he saw a sheep with a lamb just dropped by her side, when a crow marched up, and before he could interfere, picked out both eyes of the live lamb. Of course the lamb died, and Mr. M. has known of the same thing occurring repeatedly since. Several farmers, to whom we have mentioned this, substantiate it, from their own or their neighbors' experience.

Albany, New York, and Boston Live Stock Markets.

—“Subscriber,” New York and Boston are terminal markets, so to speak. Albany, however, is not, and a large number of the animals offered there, or sold there perhaps, are reshipped to New York and Boston; in fact they do not leave the cars.

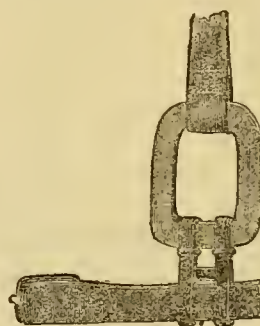
Wool or Grease.

—“We can't raise wool for less than 75c. a lb.” So say the Ohio Wool Growers, in Convention assembled. Is it possible? To this complexion have we come at last? Where are the “Improved American Merinos?” Have the manufacturers learned to “discriminate?” Won't they pay as much for grease as for wool? There is something wrong somewhere. Were we not told that if we would pay a thousand or fifteen hundred dollars for an Infinito, we could raise wool for little more than the expense of shearing. It is not two years ago that, at one of the meetings for Discussion in the Evenings during the N.

Y. State Fair at Rochester, Lewis F. Allen cautioned farmers against rushing thoughtlessly into sheep speculation, saying that he had known wool sold for 25c. per lb., and probably it would not be many years before we should witness the same thing again. Whereupon up rose an Honorable gentleman from Iowa, and remarked “Well, we can raise wool for twenty-five cents a pound.” Is he of the same opinion still, or does it cost more to produce grease than he calculated?

Sows Lying on their Pigs.—It may be well at this season to again remind the readers of the *Agriculturist*, that all danger from sows lying on their young can be obviated by simply fastening poles on the sides of the pen, say a foot from the sides, and a foot from the floor. The sow rarely, if ever, lies on her young, she crushes them against the sides of the pen. The poles, by keeping the sow a foot or so from the sides, prevent all danger. It is a simple matter. Any one who can cut down a pole in the woods, and knows how to use a saw and a hammer, can spike them together and to the sides of the pen, and the thing is done. It is exceedingly annoying to lose two or three little pigs out of a nice litter, when half an hour's work would have prevented it. It is not merely the loss now. Next fall they will be worth \$20, \$30, or perhaps \$40 a piece, at little cost for keeping.

Contrivance to Prevent “Interfering.”—We have noticed in use upon the Third Avenue Railroad in this city the contrivance illustrated below to prevent horses interfering with their fore feet.



It consists of a piece of oak board, 2 1/2 inch thick, of about the shape indicated, bound with an iron hoop, and with the center cut out for lightness. This is of a width sufficient to go easily between the fore-legs; yet to touch both and be a perpetual hint to the horse to carry his feet further apart. This piece of wood is suspended upon the martingale strap, as shown, and connected with the girth by two small straps, kept about two inches apart by a bit of hoop iron riveted to each. The martingale strap, or a broad strap connecting it with the collar, is attached to the opposite and forward end. In use, this is allowed to swing freely a few inches below the breast, and is said to be very effectual in preventing interfering.

Ashes and Plaster.—“G. H. L. H.” has 12 acres upland grass land, from which he cut 25 tons of first quality Timothy last year. He wants to top-dress it with ashes and plaster, but neither knows how much nor in what proportions to apply them. As to the proportion of the two, hardly two farmers will agree, or have the same reason for preferring any particular proportion, while all agree that such an application will add often half a ton to the acre. As to quantity, he can afford to pay as much for this manure as the additional value of the crop will amount to,—because its effect will be seen for years.

Nepaul (Naked) Barley.

—Mr. Henry Fleming, of Canada West, sends us the following interesting collection of facts about naked barley: “In May, 1862, I obtained of the *Agriculturist* some of the ‘Nepaul Barley.’ From that small amount of seed I have now, by repeated sowings, upwards of 200 bushels of most beautiful barley. Will you not state why it is not more cultivated. I find it weighs 61 pounds per bushel. If this be the ‘naked barley,’ or ‘wheat barley,’ described in ‘Johnson's Farmers' Encyclopedia,’ you will find he says: ‘The six-rowed naked barley is cultivated in various parts of Europe, and is greatly esteemed for its fertility. In some parts of Germany it is regarded as the most valuable kind of barley, and by the French, on account of its supposed productiveness, it has been termed ‘celestial barley,’ or ‘heavenly barley.’—M. Mazuceo, in a French paper, earnestly recommends the more general cultivation of naked barley, as he states that it weighs as much as the best wheat, and its quality resembles them so much that it may be used for the purpose of making good bread, and also for pearl barley. In mountainous countries its produce is twenty-four to one.—Warren Hastings said, after twelve years' experience in the cultivation of naked barley, that it is of the greatest importance to promote the culture of this sort of grain. ‘It is,’ he adds, ‘the corn that, next to rice, gives the greatest weight of flour per acre, and it may be eaten with no other preparation than that of boiling. It requires little or no dressing when sent to the mill, having no husk, and consequently produces no bran. It is gathered into

the barn, and may even be consumed, when the seasons are favorable, in about 80 or 90 days after being sown; and there is no species of grain better calculated for countries where the summer is short, provided the vegetation be rapid.’ ‘Naked barley, or wheat barley, is so termed in consequence of the grain separating readily from the chaff when thrashed. It is a native of the north, and will bear sowing early in the season; it makes strong malt, and is excellent for the fattening of hogs and cattle.’ The above description corresponds very well with my ‘Nepaul Barley.’ It is very prolific and hardy, stands drouth well, and is not attacked by insects, smut, or other diseases. It makes good mush, bread, etc.”

Wheat Chaff for Packing Ice.

—“S. L. P.” of Gloucester Co., N. J., writes: “I have seen at different times in various agricultural journals, materials recommended for keeping ice, such as sawdust, turning shavings, tan, salt hay, etc., but among them all I have never seen, I believe, wheat chaff recommended. I have tried that for the past three years, and prefer it to any of them; it is readily obtained, especially by all farmers; is light and easily handled, and not good for much else, excepting to throw in the barn-yard as an absorbent, which can be done with it after it has done its office in the ice-house, so it is not lost in this respect. With a common dung fork the house is easily cleaned out much easier than where saw dust is used. Those who try it, will, I think, find it much more satisfactory than saw dust, shavings, or tan. My plan is, to cover the ice well with it early in the spring, and as the ice melts away from the walls of the house, I push down the chaff all around as solid as I can. After I have succeeded in getting it down solid in this way, I find the ice wastes quite slowly by melting, even in the warmest weather. I prefer the chaff of bold white wheat, as it has no beads on it, but the other will answer admirably.

Moles Eating off Young Trees. (2)

—H. R. A. Steinsburg, Pa., writes: “I have a nice lot of young apple trees, two years old, and moles attack them and eat them entirely off below the surface. Please give hints for destroying them.” It is not moles, but probably borers that eat the stems, and the moles, if in the soil near the trees, are there to eat some of the insects, which may be living on the roots of the trees, or which are ready to ascend when the warm season comes.

A Cellar above Ground.

—Mr. Pfeffer, of Shelby Co., Iowa, asks how he can build a good, cheap cellar on the flat prairie. We presume he cannot get good drainage and so his cellar must be above ground for the most part. If one can dig two feet and still secure a dry bottom, it is easy to use the earth for walls, and making them some 3 feet thick (2 at the top and 4 at the bottom), have a cellar 6 or 7 feet in the clear—cool in summer and warm in winter. We saw in Richmond Co. (Staten Island) last summer, on a low part of the island, an ice house and milk house together, almost altogether aboveground, the whole of which was covered with several feet of earth, beautifully sodded, and looking very much like the bomb-proof of a fort.

Building Stone Fences.

—In a recent conversation with the Hon. John McLean, of Wheeland, one of the most experienced farmers in the State, he remarked that he formerly had trouble with his stone fences being thrown down by the frost, but since he had adopted the plan of building them on a ridge thrown up a foot or eighteen inches high, they had stood very well. The plan has a double advantage: The soil thrown out from the side of the wall lowers the ground, while at the same time it raises the fence, and thus saves stones and expense in building. Knowing the importance of details in all such operations, we should be glad if he would be kind enough to write them out for the *Agriculturist*. And at the same time, we should like to hear from others.

Grain Drill or Broad-Cast Sower.

J. C. S. Fond du Lac Co., Wis. We certainly recommend to you to buy the drill rather than the broadcast sower. Except on very rough or stony land, our common grains are better drilled than sown broadcast. The distribution is more uniform: the depth is accurately gauged; the amount of seed required is less, the stand is more even, and the yield better.

To draw a rusted Nail or Spike.

First drive it in a little which breaks the hold, and then it may be drawn out much easier.

Chloride of Lime.

—“Cayuga Co. School-girl.” This term is used to express the Bleaching powder is in common use and correct enough, but in a chemical nomenclature is incorrect. If your text book employs it thus, so much the worse for the text book.

Chicken Doctoring.—The hit or miss style of medicinal practice has some advantages. Not the least is that it brings occasionally pleasant surprises. "Aconitum" writes, that hearing that "arsenicum had been successfully used as a preventive and cure of Rinderpest in horses" (horses never have the disease) he tried tincture of Aconite to cure a paralysis in the leg of a chicken. This drug was used "as answering best to the totality of the symptoms." Three drops were given in a teaspoonful of water, and the paralysis was soon cured. The principle of *similia similibus* finds a double application—a little more Aconite would have caused a paralysis *in toto*; 3 drops caused a total cure *in pedo*.

Ale for Chickens.—We recommended bread soaked in ale for chickens with colds or attacked with the roup. A correspondent asks for a recipe by which he can make a small quantity of ale. It cannot be done; but where ale cannot be obtained, *lager beer* will do very well, and we have administered rum and water (and probably any other spirituous liquor would do as well) with the very best effects, graduating the dose in proportion somewhat to the strength of the medicine.

Transportation of Eggs for Setting.—So many disappointments occur when eggs are carried a great way, that many of our best poultry fanciers and dealers refuse to sell eggs to go far. They are wise, for several reasons—principally on account of the hard feelings occasioned, and secondarily, because they can make it more profitable to raise the chickens.

Chicken Literature.—Why hens should inspire our comic writers we do not exactly see; but they are made the excuse for a great deal of nonsense. Even the religious papers, such as the Independent, have occasionally a funny column devoted to chicken talk. The writer of the following, who signs himself "Chittagang," has evidently been reading the Independent: "Chicken on the Brain.—The best time to set a Hen is when the Hen is *reddy*—I can't tell you what the best breed is, but the Shanghai is the meanest—it costs as much to breed one, as it does a stage Hoss, and you might as well try to fatten a fanning mill by running Oats thru it. There ain't no profit in keepin' a Hen for his Eggs if he laze less than won a day. Hens is very long lived if they don't contract the throte disease. There is a grate many goes to pot every year by this melankoly disease. I can't tell exactly how tew pick out a good Hen, but as a general thing the long geared ones I kno are least apt to scratch up a garden. Eggs packed in equal parts of salt and Lime water, will keep from Twenty to Thirty years if they are not disturbed. Fresh Beefsteak is good for Hens. I serpose 4 or 5 pounds a day is all that a Hen would kneed at first. I shall be happy to advise with you at any time on the Chicken questishon, and take pay therefor in Eggs."

Canary Seed.—A single firm in this city has sold 15,000 bushels (60 lbs. each) of canary seed within the past two years. So far as we know this is used exclusively for bird feed, and indicates the extent to which caged birds are kept in this country. Sales of other large houses have very likely been equally great.

Broom Corn.—Jas Graham, Cuyahoga Co., O., inquires for the best machine for planting broom corn.

Tomatoes and the Agriculturist in Colorado Terr.—A subscriber in Colorado gives us some account of his gardening operations, in figures which look rather large. Last year he kept a strict account of the product of half an acre. He sold, in fruit, \$2046.39; in cans, \$350, and in catsup, \$87.50; in all \$2483.89. The sales of tomatoes commenced at 75 cents per lb., and closed at 20 cents. The writer attributes much of this success to having seen the *Peejee* noticed in the *Agriculturist* as a good variety. He, like an enterprising man, sent for the seeds, and thinks that this variety has in two years been worth from \$1500 to \$2000 over the common kind. We suspect that to be the greatest amount of good the *Agriculturist* ever did to any one half acre.

Pure Air Everywhere.—One of our most distinguished physicians informed the writer a few days since, in speaking of the health giving influences of pure air and light, that for ordinary patients he would rather have the protection of a tent fly, the south side of a hedge or fence, than the best house that could be built, or to that effect. To illustrate how much attention educated, wealthy, thoughtful people give to this subject, we publish a statement which comes to us from a wide-awake traveller and church-goer who recently visited Vermont on business, and of course went to church. It was not 1000 miles from Bennington. He says: "The Church referred to have just put their meeting house,

erected in 1807, or thereabouts, in complete repair. The church was originally built over a portion of the cemetery; since then there have been some burials under it, though not for several years. Excavations have been made near the ends for furnaces, and a passage way has been dug between them; the removal of earth disturbed several graves, and the bones were removed and reinterred in the cemetery. Those not disturbed remain there still. The air for warming the church is taken from this vault, the outside air being generally excluded. After being breathed by the congregation, it is returned to the furnaces and rewarmed, as is frequently done in other churches. This church and congregation are highly intelligent and wealthy, and are probably as careful in regard to ventilation as most of the New England churches outside of Boston. How many congregations would relish breathing the air from an old burial vault, I don't know, but it is a fact, that nine-tenths of New England are breathing constantly an almost putrid atmosphere in their own houses, change of air not being provided for."

"Designing Wall Paper."—"Reader." We know of no book on the subject. There is a "School of Design for Women" connected with the Cooper Union. Doubtless the Secretary of that Institution will know if the branch is taught there.

Seed Queries.—S. H. Cowles, Onondaga Co., N. Y. The necessity for changing seed or obtaining it from a different locality, is a subject about which there has been much discussion. It is mainly a question of the adaptability of varieties to particular soils and situations. Where a variety retains all its characters and is equally productive year after year, there is no need of changing the seed, but where it shows a tendency to degenerate, then get seed from a locality better adapted to it. There is no probability that apple and pear seeds will produce fruit like the stock from which they came.

Swine—Essex, Berkshire, etc.—There is a good deal of inquiry where to get well bred hogs of various breeds, especially of the kinds named. Those breeders who have them should advertise more freely.

New Jersey vs. Long Island Lands. Our veteran correspondent "S. W."—referring to our remarks on portions of the "Barren Lands of Long Island," (May *Agriculturist*, 1866), to the effect that their coarse subsoil would not hold water enough for dry seasons—thinks that late experiments on the "same sand and gravel formation in New Jersey" have proved that with green-sand marl these lands yield crops of clover, etc.—The comparison fails, because on the New Jersey lands referred to, the coarse sand and gravel do not come very near the surface, but there are several feet of soil sufficiently compact to hold water, or conduct it upward to the surface.

Profitable Bees.—D. C. Hunt, of Orange Co., Vt., writes to the *Agriculturist*, that he made over \$300 net, besides six new stocks, out of 26 stocks of bees in (Langstroth's) movable frame hives the last season.

How to keep Machine Oil Liquid in Cold Weather.—When sawing fire wood, or timber by machinery, at a distance from the dwelling house, or when thrashing grain, or running any kind of machinery in cold weather, the most convenient way to keep oil or other lubricating substance in a thin, liquid state, is to heat a piece of hard wood plank, or a slab of marble in an oven, wrap it in a thick blanket and carry it to the woods, field, or barn, keeping the oil can, grease vessel, or dinner pail even, in close proximity. A piece of plank a foot or more square will retain sufficient heat to keep such articles warm for several hours in a very cold day, thus avoiding much trouble. Moreover, oil kept warm by this means, will not be injured by being heated too hot. In the absence of other materials, two or three bricks thoroughly heated will retain sufficient warmth, nearly as long as a plank of hard wood.

Interesting Meteorological Facts.

—Mr. H. T. Haviland, of Brooklyn, who has for many years observed and recorded the temperature at 7 A. M. in winter and 6 A. M. in summer, exhibits the following figures, showing that the mean temperature of two opposite months (January and July for instance) is a very close approximation to the mean temperature of the year. Thus it appears that the mean temperature of January for 19 years at 7 A. M. is 28° Fahrenheit, that of July for the same period at 6 A. M. is 67°—the mean of these two, being 47½°, while the general average for the whole 19 years is 47°. The average of Feb'y (28°) and August (66°) is 47°. That for March (34°) and September (59°) is 46½°; April (43°) and October (50°) give 46½°; May (52°) and November (41°) give 46½°, and June (63°) and December (32°) give the average 47½°. Mr. H. thinks

that were the observations more numerous and more accurate, the mean temperature of any two opposite months would represent accurately the average temperature of the climate at any place.

Peat Land.—"Subscriber," Clark Co., Ill., has a 160-acre bed of peat drained, and dry (so that several acres took fire and burned up, leaving some feet in depth of ashes). The question is, how to till it. It is covered with thistles. The best way to manage it, might be to plow deep, cross-plow, and so dry the top; then burn this off, mingle the ashes with the rest by plowing and harrowing, and then it would probably sustain a good growth of timothy and red clover, or bear corn. Such peat is a very valuable manure for sandy land, and will pay to haul on any sandy land that it will pay to fence; and the sand is equally valuable upon the peat.

How to Set Smoothing Planes.—"C. H. E.," Rockingham, N. H., in a note describes a "trick" well known to all joiners, but which may be useful to those who lack professional skill. He says: "It is frequently found difficult to adjust the 'cap' and 'iron' of the smoothing plane, so that both shall retain the desired position. When the plane iron is struck to start it forward, the 'cap' does not move forward with it, but a slight blow upon the forward end of the plane will start both forward together, thus bringing down both irons in the proper manner upon the work."

"Gunpowder Rendered Harmless."—In an item in the January Basket an account was given of a plan for rendering gunpowder less readily combustible, by mixing it with powdered glass. A friend, who knows all about great guns and gunpowder, writes us that the invention has no practical value. That the great danger from powder is during its transportation, and that a slight jolting causes the mixed powder and glass to separate. He says: "Take a tin pan and make the mixture perfectly; stick in your red hot poker, and it will not burn much. Reheat the poker, give the pan a few sharp raps on the edge with the hand, and reinsert the poker—if you dare."

A Mild Winter in Oregon.—David D. Prettyman sent from Salem, Oregon, on Dec. 4th, specimens of grass and strawberries in flower, and a rose, in proof of the mildness of the winter on the Pacific coast. He then had violets in bloom and radishes in his garden.

Citric Acid in Cancer.—The cooling and tonic effects of lemon juice are well known. Citric acid is to all intents and purposes crystallized lemon juice, and is often used as a substitute for lemons in making lemonade, etc. An Italian physician, Dr. Brandini, finding that a patient, with a cancer of the tongue, received great relief in eating lemons, was induced to try the effect of citric acid on other cancer patients, which he did much to their relief. In a case of hopelessly incurable cancer, under our own observation, it has been used with the happiest results, and afforded a greater relief from pain than any other application that has been tried. We found that this use of citric acid was not known to the physicians of our acquaintance, and we give it for the benefit of our medical readers. The crystallized acid is used, one part by weight, to 90 parts of soft water. The weight of a common nickel cent to a pint of water comes sufficiently near. The solution is applied by moistening a piece of lint, and renewed when the pain returns.

Cutting Notes and Bank-bills in Two.—A subscriber asks: "Is it against the law to cut a note in two parts, and send one half at one mail and the other the next, so as to guard against thieving on the way?" This practice is very common in England, where the notes are arranged to encourage it, the numbers and letters being duplicated on the opposite sides, and probably also the laws, or decisions of the courts, make it easy to collect on one half if the other is lost. This custom does not prevail in this country and it would be hard to collect on half a note.

Notices of the Agriculturist.—The notices of the *Agriculturist* by Agricultural and other papers have not been unappreciated because unnoticed. We were especially gratified at most favorable mention of this sheet in that excellent paper, the Canada Farmer, which is, by the way, one of the best of our agricultural exchanges. The N. Y. Citizen is a paper devoted to the difficult task of reforming the abuses of city government. Its chief editor, "Miles O'Reilly," is widely known for his poetical contributions, and his paper is one of the most independent and outspoken in the country. The following is an extract from the Citizen's estimate of us: "Nothing gets a place in the paper that has not an object of practical utility or instruction; and yet so genial and

unobtrusive is the spirit presiding over the whole, that we never feel lectured, or as if we were being taught in some art by a pedagogue who desires us to realize that he is, and that we are not, already familiar with the subject. Each number of the *Agriculturist* contains about forty pages, of which some thirty are reading matter and the balance advertisements—these latter being selected with care, and only such as the editor is willing to vouch for the good faith being admitted. This notice—it may be requisite to add in these days of “puffing”—is a sincere tribute of admiration from *The Citizen* to a pleasant and instructive contemporary—having no other object than to call the attention of our readers to a publication which we think it may be for their interest, as it has certainly been for our pleasure, to study.—This describes what we aim at doing.

How to write for a Newspaper. —

Rev. Dr. Hallack, the veteran editor of the Amer. Tract Society, says: “Contrive to say the most possible in the least space. Pitch right into your subject. Contrive to make the title and first sentence so that it *must* be read; and so of the second, no matter what has preceded, or is to follow.”—Strict attention to these simple rules would reduce the number and dimensions of our ‘blanket-sheets,’ speedily bring down the present high price of printing paper, and relieve many a weary and perplexed editor of the disagreeable necessity of rejecting numerous otherwise well-written and desirable articles.

The Northwestern “Agricultural-ist.”

—The first number of a paper with the above name, issued in Chicago, makes its appearance among our exchanges. A very fair looking sheet and a generally creditable beginning. Only, Mr. Agricultural-loreal-ist, you should spell your name according to good usage, and when you take things from the *Agriculturist*—without the *al*—you should get in a way of giving credit. You are a beginner and we merely offer a bit of friendly advice.

“Across the Continent,” an account of a Journey to the Pacific, by Samuel Bowles, Editor of the Springfield Republican, is one of the most readable books of the season, and valuable because it has all the interest of the best novel, and will therefore be read through by young as well as old, while it gives a large amount of information at the same time. Price \$2.

The Department of Agriculture.

It is too bad that the head of the great “National Seed Shop,” just as spring trade is opening, should be subjected to so many annoyances. Congress has put its meddling finger in and asked what has been done with the money. It is the business of Congress to appropriate money, and the members ought to take what “books with the pictures all mixed in” they can get, and such parcels of that old lot of seeds as are not yet disposed of, and keep quiet. Then the papers are meddling with what is none of their business. The Country Gentleman does not like it, because a man was sent to China for the purpose of ascertaining how to make sugar from sorghum, and because said messenger found out that John Chinaman only grew sorghum for “chewing and sneaking the stalks,” he must pitch into the Commissioner. Isn’t that result as well worth knowing, as that alligators’ blood will not kill insects on orange trees—a bit of information that a former government agricultural official obtained by sending a man to Florida to try it. What would you have? Then there is the Maine Farmer, which is in the main a quiet and dignified sheet; it must interfere. Hear what it says: “We have it from a source eminently to be relied on, that the Commissioner was engaged in writing a statement respecting sugar cane seed, and being called away from his desk for a few moments, one of the clerks made a glance at his unfinished manuscript, and found he had written it *Shuger can seed!*” Well, Mr. Farmer, we should like to know if that don’t spell sugar cane seed, what it does spell? Besides, it’s phonography, and moreover do you expect *officials* to write like Down East Schoolmasters? The Philadelphia North American is also interfering with the business at the seed shop. Its Washington correspondent says: “But the practice of purchasing miscellaneous seeds by the ton, and forcing members of Congress to act as seedsmen in general to their constituency, is a nuisance which calls for abatement.” Then to add to all these annoyances, which most seriously interfere with the equanimity necessary to a successful competition with the one-horse seed shops all over the country, the big screw is lost! The excellent press of Hicock has been replaced by a real hydraulic press. The Commissioner, when he first saw it, at once detected a defect, and asked “where’s the screw?”—Evidently the screw is missing, and if any one has found a screw belonging to a *hydraulic* press, they will either give notice through the press, or express it to the Depart-

ment, as it is very necessary it should be there before the press of the spring trade. It is bad enough to have a screw loose, but to have one gone altogether is “most tolerable and not to be endured.”

The Rinderpest.

This terrible scourge still holds almost undisputed sway among the herds of Great Britain, so far as it has progressed. The latest reports give over 13,000 cases per week, as known by the government officers. The inoculation and other remedies prove ineffectual. Efforts to prevent its spread have been imperfect and weak, while the cupidity of some individuals, and the heedlessness and ignorance of others, has spread the seeds of the contagion far and wide. There was abundant knowledge in the country how to stop the disease, but their government was afraid to act with energy, and all that has been done is sheer trifling. In the year 1857, the Royal Ag'l Society of England, with the Ag'l Societies of Scotland and Ireland, and receiving the co-operation of the Foreign Office of the Government, sent Professor Simonds, of the Royal Veterinary College, to the Continent, to investigate this disease. The very fullest opportunities were afforded him, and he made an extended and valuable report. The conclusions at which he arrived are of especial interest to us now that we, as a nation, are exactly in the same condition that England was then.

He found the disease restricted to comparatively narrow limits this side of the Steppes of Russia, from whence it occasionally escaped in the ordinary course of cattle traffic into Austria, Hungary, Galicia, and Poland, where it is usually, as they say, “stamped out”—being surrounded by a military cordon, and all traffic in cattle stopped within or out from the district thus shut up from the rest of the world. This practice is so perfectly effectual where the disease is understood, that Mr. Simonds regarded it as entirely improbable that the disease would ever afflict the English farmer. He says: “That no fear need be entertained that this destructive pest will reach our shores. Its present great distance from us would of itself afford a fair amount of security; but when we add to this, that no cattle find their way thence to the English market; and that in the event of the disease spreading from Galicia, it would have to break through hundreds of military *cordons*, one after the other, before it could possibly reach the *western side* of the German States; and moreover, that for years past, commerce has been unrestricted, with regard to the importation of skins, hides, bones, etc., of cattle from Russia, and elsewhere, all alarm, we believe, may cease with reference to its introduction into the British Isles.”

This is very instructive—showing us our great danger—and warning us not to rest in fancied security, as did our brother farmers of England, until herd after herd is swept away. It does not prove that this cordon principle is *not* effective, but only that some carelessness allowed the escape of diseased animals, or in some way the transit of the disease from the countries where it is domesticated, to the coast, and to England. The fact remains, that perfect isolation of the diseased and of infected cattle, and of all persons, animals, and things which have been in close proximity to them, or their excretions, is perfect security against the disease. And we want the Legislatures to empower the Executives of the different States to act with all power and promptness, should any case occur in this country, even to the using of the militia.

American Dairymen's Association.

To the Editor of the American Agriculturist.

In your February number you print an item respecting the late Convention of Cheese and Butter Makers, held at Utica, which contains two errors. The newly adopted name of the society is the “American Dairymen's Association,” and the undersigned is Secretary and Treasurer.

It was formed in January, 1864; its purpose being to advance the interests of dairymen in every way—mainly, however, in furnishing a medium through which improvements in the science of cheese making can be best disseminated; in encouraging proper emulation in this department of agriculture, and in aiding and urging experiments in the various processes of cheese and butter making. Dealers at home and abroad admit that great improvement has been made in American cheese during the last five years. And yet we are very far from perfection. Many phenomena remain unexplained, and the causes of many objectionable things in making and curing cheese, are not at all understood.

For instance, the questions “what makes cheese porous?” and “what effect has a large amount of rennet upon the flavor of cheese?” will receive answers as various as the number of dairymen questioned. We need a substitute for rennet. A substance that would replace this not over-agreeable article would be worth tens of thousands of dollars annually to the dairymen of America.... We need a preparation which, when added to milk that is sweet, but near the point of souring, will prevent any change until sufficient time elapses to convert the milk into cheese; it would be invaluable.... We need an article which, when applied to the vat of curd and whey, will indicate instantly and precisely the degree of acid which exists, or how rapidly the changes induced by the rennet are progressing.... We need to know in what way all the cheese can be obtained from the milk. It is conceded that the 10 to 11 per cent. which we now get ought to be increased to 12½ or 14 per cent.... We need to know why, when American cheese is analyzed, and shows most butter, and English Cheddar most water, the English article is nevertheless better; and how the 5 to 7 lbs. of water per 100 lbs. of cheese, which we lose, can be saved and yet the cheese be the better for it.

The association is composed of members in all parts of the dairy regions of America. Many of them, keen, practical men, are experimenting and thinking of these and other matters, and doubtless every year notable progress will be made. The society ought to have sufficient funds to be able to employ the best scientific talent of the land to work out important problems, some of which have been suggested; but the inexplicable apathy of the great mass of dairymen in regard to this matter renders this, as yet, impossible. The propriety of sending an agent to Europe the coming season, for the purpose of studying closely the processes of making Cheddar and Cheshire cheese, as well as the defects of American cheese and the style demanded for that market, the diseases of herds there, etc., etc., was discussed at the recent convention. It is not improbable that X. A. Willard, Esq., of Little Falls, a practical dairyman and able writer, who has doubtless had more opportunities for observation, and is better informed respecting American cheese making, than any other man, will go on this errand—starting in April. Very respectfully, yours,
Verona, Oneida Co., N. Y. GARDNER B. WEEKS.

Practical Hints on Cotton Raising.

BY A. N. DEERJW.

MESSEURS. EDITORS: I send a few items for the *American Agriculturist*, gathered from my experience. Upland and lowland cotton are raised from the same seed. Upland is land never subject to overflows, and is generally of an uneven and rolling surface; its substance is a reddish porous clay. (I speak of Vicksburg and vicinity.) The lowlands, or bottoms, are deposits from overflowing rivers, and are generally dark, of a sandy, loamy, mucky nature. The upland produces from one-third to three-fourths of a bale per acre, and the lowlands from one to two bales, of 400 lbs. each per acre. Upland cotton grows from three to five feet high, and lowland six to seven feet. The lowland fibre grows coarser than the upland, hence the difference in value.

Plowing can be done all winter, but the nearer it is done to planting time the better, as the rains beat down the earlier plowing. It is necessary, however, on large plantations, to commence early, and we adopted the following plan which we were told was first practiced by a neighboring planter, who was considered one of the most successful cotton planters in the State. Besides other advantages, it saves one-fifth, or nearly so, of the plowing, which is a great object where hundreds of acres are to be plowed. (We plant upland in rows four feet apart, and lowland five and sometimes six feet apart.) Every four, five, or six feet, as the case may be, plow two furrows together, leaving a portion beneath the two unplowed. When the ground is all plowed thus, then commence what they term "breaking out," which consists in plowing the ground left between the rows, and turning the furrows toward the plowed ridges. If late, one gang can break out and another follow and plant.

A ridge, or row, is four or six furrows turned together, and the seeds are planted on the center of this ridge. This ridge is harrowed with a harrow about the size of a five-tooth cultivator, which has handles, similar to a cultivator. After harrowing, a small plow is used to make a crease or furrow in the ridge in which the seeds are planted. (We—Yankee-like—improved on the harrow by putting a large cultivator tooth about one foot in the rear, in the center. It did the business as well, and saved one half the labor.)

One peck of good seed will plant an acre; but being generally in abundance, two to five bushels are used, being scattered in the furrow by hand. As cotton grows, each fibre is attached to the seed, and in ginning the fibre is broken off; hence the seeds have a coat of short cotton, so that they might be made into a ball like snow. When seed is scarce, it is wetted and rolled in dust, and then it can be dropped as readily as corn. The harrow is used by many for covering the seed, but a slab drag was thought to be the best. It is made of a piece of hard wood log, which is half round, or slab-shaped, about 30 inches long, 18 inches wide, and 8 thick, with handles, set in the bark side. The bottom is flat, with a notch 6 inches wide, 3 inches deep at the front, and running back lengthwise, about 1 foot on the bottom, in a point. The shape of this notch tends to draw the dirt over the seed, and the flat surface following, pulverizes and presses it like a roller.

Cotton, like most other seeds, requires that the ground should be warm before planting. The 10th of April is sufficiently early, and we have had fair cotton planted the first of June.

I found the young plant nearly as tender as a potato vine grown in the cellar. This was the case whether it came up singly or in clusters. After the plant is well up, a scraper is run on the rows each side of the plant, and merely scrapes off the weeds. Next a hoe is used to thin out the cotton plants, leaving one or two plants together, and these ten or twelve inches apart. When the plants are about a foot high, "a stand" is made, which is simply leaving one plant in a place, and three or four feet apart.

Hoeing now commences in earnest. Hilling up is best in a dry season. We found nothing but the plow and cultivator used to assist in hoeing. This is the most critical time with cotton, and if the weeds get the start, it is much injured, and perhaps lost. Hence it is best to have the most improved implements at hand. The best horse hoes for cotton, hoe both sides of a row at once.

Picking follows hoeing. A bag is hung at each side, rather back, to be out of the way, and picking is done with both the hands. The cotton pod, or bole, is in form somewhat like a small lemon, and if opened whilst green, will divide in 3 to 5 sections, like a peeled lemon or orange. Cotton with the seed in, is called "seed cotton," and that with the seed out, is ginned cotton, or lint cotton. It takes 1200 to 1400 lbs. seed cotton to make a bale of 400 lbs. of lint cotton. Ginning machines, plows, nigger hoes, bagging and rope, may be found in any village in the region of cotton raising, but at Cincinnati or St. Louis they could be bought much cheaper for the Mississippi Valley, (and so at New York or Philadelphia for the Atlantic States.) Plantation-supply Stores make reasonable advances and take the crop, but it is much better to have means to operate independently.

In conclusion, cotton-raising is as simple as corn raising. To raise one hill, it is—plow, plant, hoe, gather and sell; and to raise a thousand acres it is but one hill many times. The product of a hand is ten bales, but some will raise twenty bales. Cotton is not a sure crop, as I had formerly supposed. The Army Worm, Boll Worm, Blights, Mildew, etc., are some of its enemies. Of 300 acres which we cultivated in 1864, the Army worm left us but 19 bales, and from 200 to 300 bales had been raised on the same ground in good seasons. Three good crops in five is as much as can be safely counted on. There is hardly a negro in the cotton region but knows how to raise cotton by the common method, but enterprising and ingenious men may make vast improvements.

Coal Tar for Preserving Timber. — Valuable Experiments.

Fourteen years ago I read in an English journal the result of various experiments made by some scientific gentleman or association, to test the preservative qualities of coal tar; these experiments led to the opinion that no decided benefit could thus be derived from its use. Not satisfied with their experiments, I tried the following: I procured four pieces of 4-inch pine joist, about two feet in length; No. 1 received no tar at all; No. 2 was boiled for half an hour in coal tar; No. 3 and No. 4 were coated with hot coal tar with a brush. I set them up to dry, but No. 4 fell down into a heap of sand, and before it could be got out, was completely covered with sand. It occurred to me that this might possibly be a benefit; so in a few days, I gave it another coat of tar and sand. I buried

the four sticks in the garden, covering them about four inches in depth, and two feet apart; they weighed, when buried, about as follows: No. 1, 6½ lbs.; No. 2 and 3, about 7 lbs. each; No. 4, 7½ lbs. Two years afterward I dug them up. No. 1 weighed 11 lbs.; No. 2, 8 lbs. 3 ozs.; No. 3, 9 lbs.; and No. 4, 7½ lbs. Five years afterward, they were dug up again; No. 1 weighed 9½ lbs., and showed decided signs of decaying; No. 3 was also slightly decayed, and weighed 10½ lbs.; No. 2 was sound, and weighed 8½ lbs.

At the end of nine years, they were again examined. No. 1 (without tar), had rotted away and disappeared; No. 3 (coated with tar), had also rotted very much, but still retained its form; No. 2 (boiled in tar), showed signs of decay, and weighed about 11 lbs; the one coated with tar and sand, was still sound, and weighed 8 lbs. 1 oz. They were examined again a year ago, (13 years in the ground); no trace of the one coated with tar could be found; the one boiled in tar crumbled in pieces; but the one coated with tar and sand was to all appearances as sound as when placed there, weighing about 8 lbs. 4 oz. The tar and sand had not hardened into stone as I had hoped, but still the sun did not soften it when exposed for a long time to its rays. I have buried it again, confident that it will remain in its present condition for many years; in fact, if decay is superinduced by moisture mainly, I see no good reason why this stick should rot at all, for it is thoroughly coated with the tar and sand, through which the moisture can with difficulty penetrate. That it has done so in a slight degree, is, however apparent from its increase in weight, but then this is very slight in proportion to what the others absorbed.

About the same time I prepared four similar blocks of wood in the same way, and placed them in an exposed position on the roof of an outbuilding, standing them on end; it was summer, and the one coated with tar and sand, lost the greater portion of its covering by its running off, and in autumn it was coated again. Two years afterward I found that the one coated with tar and sand, had decreased in weight about two ounces; the one boiled in tar, about an ounce; the one coated with tar, nearly one pound; and the one without tar, a pound and three-quarters. Five years after they were examined, and all appeared sound. The one without tar weighed two pounds and a quarter less than when placed there; the one coated with tar about the same; the one boiled in tar, a pound less; and the one coated with tar and sand, a quarter of a pound less. Nine years after their being placed on the roof, the one without tar was partially decayed and weighed nine pounds; the one coated with tar was decayed almost as much, except that it retained its shape; the one boiled in tar, was to all appearances sound; and the one coated with tar and sand, was certainly so. They were examined at the same time the others were last year. The one without tar had rotted and blown away; a portion of the one coated with tar still remained, but rotting rapidly; the one boiled in tar, was slightly decayed and weighed ten pounds; the one with tar and sand, was perfectly sound and weighed seven pounds, about its weight when placed there.

From these and various other experiments I have made, I have come to the conclusion that, while coal tar may contain little by itself that will preserve timber from rotting, it may be so mixed and combined with other substances as to prevent moisture from penetrating the pores of the wood, thereby preventing or arresting decay

Hints on the Management of County Agricultural Societies.

These are among the most important helps to agricultural reform. When a society is well managed, its influence is felt in every house, and in almost every school district of the county, stimulating the minds of farmers to better methods of husbandry. The annual fair is a great educator, bringing thousands of people together, with the results of their industry, and giving them the opportunity to study each other's improvements, and to compare notes. Most of these county societies have been organized within the last dozen years, a very few only go back forty years. They have done a great and good work for the country, and during the war we have reaped the fruits of their labors, in abundant harvests, though hundreds of thousands of laborers were withdrawn from the farm, because machinery and horse-flesh have so largely taken the place of human sinews, and because the soil is more skillfully cultivated. Now that the war is over, so far from slackening our zeal in husbandry, we should renew our efforts to keep up these societies, with their annual fairs, and to form new ones where none have been organized. There are yet many counties where they might be established and do a good work in improving agriculture.

The need of them is already felt, and there are multitudes with willing hearts and hands to assist, if they only had leaders. The first requisite in organizing a county society is, to have a few spirited individuals to go ahead and take the responsibility. There is no better season than the present to talk the matter over, to organize, and make arrangements for the fair next fall. The greatest obstacle to starting a society is the apprehension that the thing cannot be made to pay. To meet this difficulty, the society may be furnished with a permanent income from the sale of life memberships, annual memberships, and tickets at the fall fair. A committee should be appointed in each town to canvass for members. If the life memberships are put at five dollars, and the annual at one dollar, and the canvass is spirited, a thousand dollars or more may be raised from these sources alone. Common inducement held out to secure memberships are the privilege of competing for premiums, and several tickets to the fair. It will be safe to offer half the sum raised in premiums.

The place of holding the fair is matter of considerable importance. A city, or large vil-

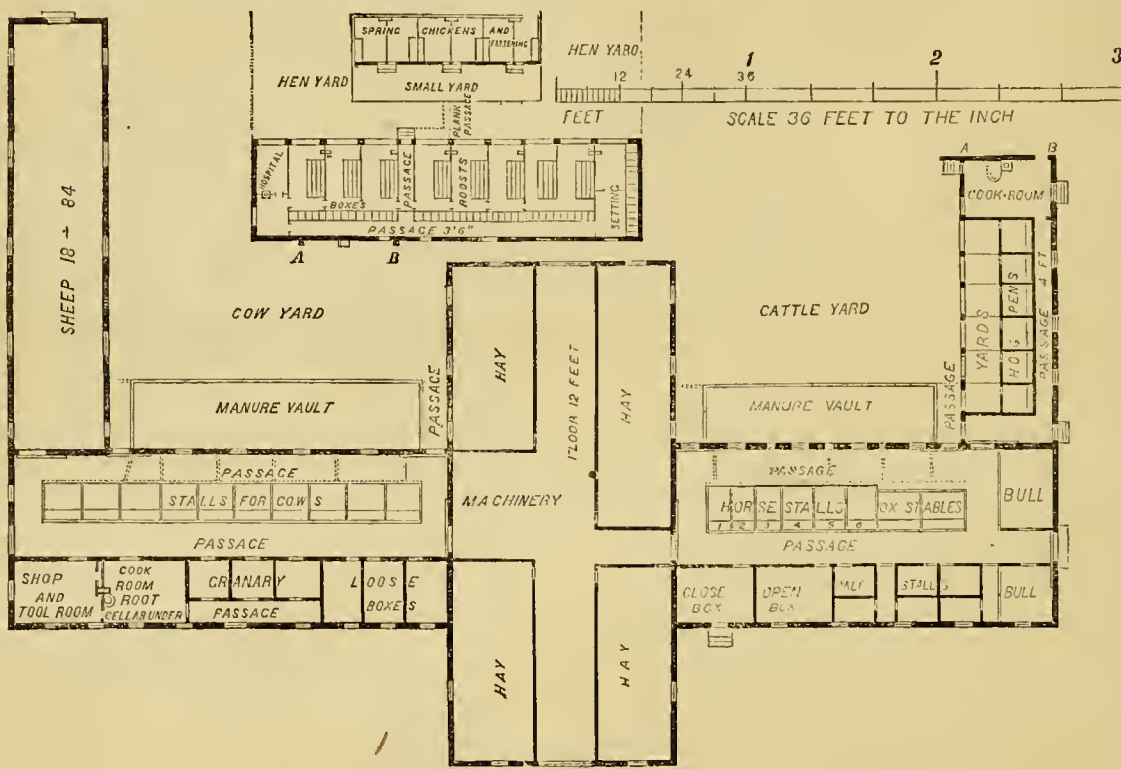
lage is generally selected, and if it be at a railroad center or steamboat landing, it is all the better. It not only favors the gathering of the people, but what is quite as important, the transportation of stock, fruits, vegetables, and manufactured articles for the exhibition. Frequently such cities can be induced to subscribe liberally for the sake of having the fair in their vicinity. The bargain is usually a good one, for a fair with its ten thousand visitors brings a good deal of trade to the place. Another reason for such a location is the facility it offers for the exhibition of other articles than the products of the farm. The seat of our large manufacturing is usually found in these places, and it is exceedingly desirable that the products of the loom and of the anvil, and indeed every branch of human industry should be represented by appropriate specimens at the agricultural fair.

The organizing and managing of a county society involves a good deal of labor, but there are a good many to share it, and it brings an ample reward to every lover of husbandry. We say then to our friends where no Society has yet been started, take it up and make a beginning.

increased without altering the plan. The arrangements for manure are very complete, and only objectionable, because, if it is not thoroughly well taken care of all the time, bad odors will penetrate the stables, especially if a south wind blows. The manure shed also excludes the sunlight from the stables, which, though never so light, ought, at some time of the day, to get the full light of the sun into the windows. It greatly promotes the health of the cattle.

The plan lacks any provision for the carts and wagons, plows, harrows, mowing machines, and other implements. It seems hardly possible that this could have been an oversight on the part of the designer, but we conclude that he intended to have located a shed in the yard for this purpose, still, this is a great blemish in the plan, for such things ought to be close at hand, and if possible, under the same roof with the animals. They are then, of course, left in their places when done with, because that is the easiest for the men. It is a great thing to have a barn so arranged that the men can do right easier than they can do wrong. It saves a great deal of scolding and annoyance.—An excellent

feature of this plan is that the proprietor can taking a hasty look, even, into his establishment, see every animal (except, perhaps, the pigs and poultry),—how the stables have been cleaned out, if the folding has been properly attended to, etc., and all at a glance. In such a barn, every thing out of place, shows, and of course, all will be kept in place much more surely than in one where angles and byways, afford good places to tuck away tools,



GROUND PLAN OF FARM BUILDINGS.

The Groesbeck Barn Plans.

We present this month the plan taking the second prize (\$100), with the specifications, or rather, notes accompanying it. It needs, however, a few words to call the attention of the reader to some of its many points of excellence, as well as to some of its defects.

In the first place, then, the barn is a very roomy and convenient one, though entirely upon one level. The great mass of the fodder is in the center, and the stock are so situated as to make the distribution of the feed of all kinds quite convenient and direct, supposing that cars (or boxes on wheels), may travel from one end to the other through the wings, on a tramway. Such an arrangement also places the granary, root-cellar, and cook-room, in direct communication with all the stock. There are lofts above the sheep and hog wings, ample for the storing of litter, etc., and the room here might easily be

pieces of harness, brooms, and rubbish of various kinds. The barn floor going through the building, is excellent. So too, are the spacious warm yards for the cattle. It is also a feature which ought not to be overlooked, that by slight modifications involving the shifting of the sheep or swine further off, there might be two or three times the number of cattle or horses accommodated that the proposition of Mr. Groesbeck called for, or that are here provided for.

The poultry establishment is made very large in order to accommodate the 300 hens that the proposition called for. In our engraving of it, we have reduced the size of the yards to bring it within a convenient space. It will be noticed that the Poultry-house is designed to go on the end of the Hog-house, the letters A, B, on one, matching the same letters on the other. The Poultry-yards for such a number of fowls ought to cover an extent of not less than an acre of ground, and this, cut up into smaller yards.

Plan of Farm Buildings.

BY G. E. HARNEY, OF COLD SPRING, PUTNAM CO., N. Y.

The engravings represent the front and rear views of the barn, and also a plan of the whole.

MAIN BARN.—The Hay and Grain Barn is the center, with wings projecting from each side for distributing fodder conveniently to animals from the principal Hay Bays. It may be taken in trucks running on rails through the feeding passages, and crossing the floor of the barn. These trucks may be simply large boxes running on small cast iron wheels. The Main Barn measures 44 by 96, with 16-foot posts and a hipped roof. This form of roof gives greater room for hay with the same height of post and ridge than the usual slant roof. The frame is pine throughout. The Thrashing-floor is 12 feet wide, runs through the whole length, and has large double doors at each end, 12 feet wide and 12 feet high. Over the thrashing floor and about 16 feet above it is a loft. On each side the bays are boarded up to the height of three feet from the floor, with common ceiling boards. The floors of the bays are of 1½-inch floor plank, and 2-inch plank is used for the thrashing floor.—All the roofs are covered with hemlock boards and shingled.

THE COW STABLE.—The wing on the left for 20 cows, etc., is 34 × 80 feet. Running through the center is a feeding passage 6 feet wide, with a door at each end 6 feet by 8 feet, made to slide along the partition. Each stall measures 7½ × 7½ feet, and will accommodate two cows. The passage behind the stalls is 5 feet wide, and communicates with the cow-yard in the rear.

There are 3 loose boxes, each measuring 8 feet by 12 feet, on the other side of the passage; and occupying the rest of the space are:

Work Shop and room for the storage and repairing of tools, measuring 12 × 15 feet; a **Cook Room** for preparing food for cattle, with a large **Root Cellar** underneath; and a **Granary**, 12 × 26 feet, fitted up with bins, etc., for grain. The entire floor of this wing, including stalls and passages, except in the rooms indicated—should be floored with paving stones, laid in cement, and the interstices filled with the same.

SHEEP SHEDS.—Projecting at right angles from the cow wing is the sheep shed, 18 × 84 feet, with a gravel floor rammed hard, and a loft above for Hay. From this there are five doors each 5 × 8 feet opening into the yards. If desired, a portion of this shed may be partitioned off for straw and bedding for the cattle.

THE HORSE AND OX STABLE, ETC.—On the

right of the main barn is another wing, 34 × 72 feet, arranged with stalls for oxen, and pens for calves and bulls. The center passage is 6 feet wide. Three of the stalls are 5 × 9½ feet, exclusive of rear passage, and three are 6 × 9½ feet. The ox stalls are 8 × 7½ feet. The Bull pen No. 1, is 12 × 16, and No. 2 is 12 × 12 feet. There are six calf pens, each 6 × 8 feet, an open or loose box 12 × 14, and a close box of same size.

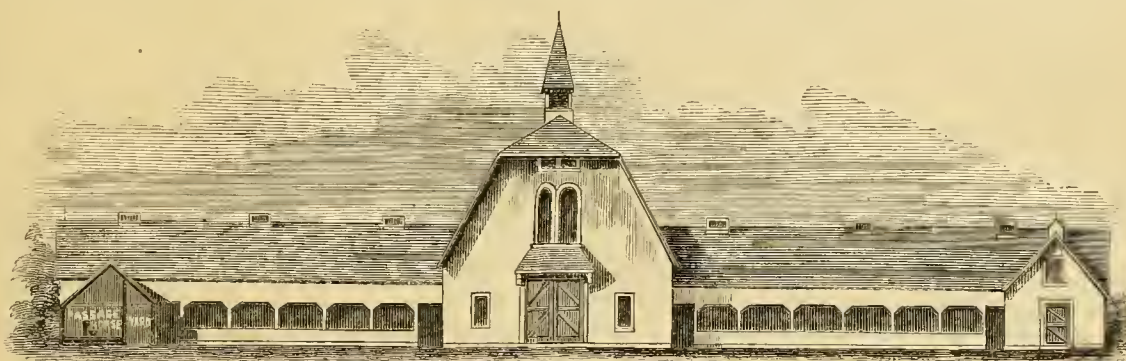
MANURE.—At the rear of both wings are manure vaults, one 14 feet, the other 12 feet wide, the bottom of each sunk 2 feet below the level of the stable floors, and paved in cement, or grouted so as to be perfectly tight. Into these all the liquid flows, and all the solid manure from the stock is put. Its outer walls are 4½ feet above the ground, and between that and the roof plate



FRONT ELEVATION OF BARN, FACING NORTH.

is an open space for the free circulation of air.

HOG PENS.—At right angles with the Horse stable is a wing for swine. Six pens, each 6 by 8 feet, with a yard opening from each, and a passage way in front along the whole range. Beyond this is a room for preparing the food, with a chimney so arranged that the extra heat from the boiler and flue may be taken into the hen coops beyond. This room has bins for food placed along the side, and should be supplied with all the necessary or useful fixtures.



REAR ELEVATION OF BARN.

THE POULTRY HOUSE opens from this room and is divided into apartments, as in the plans, for the several breeds or groups of fowls. Each apartment, 8 × 16 feet, contains nests and roosts, and other conveniences, as feed boxes, ash boxes and water troughs. Separate rooms are supplied for setting hens, and separate coops in the yard for spring chickens and for fattening fowls. The whole is 20 × 78 feet, with posts 9 feet high. The hen yard may be extended indefinitely.

THE CATTLE YARDS at the rear of the barn may be made as large as is desirable. All this range of buildings is designed to be built of wood on a stone foundation, the sides to be covered with vertical boarding and battened, and the roofs covered with shingles or slate.—There are two large ventilators on the top of the main

barn, two in the ends, and several are placed at different points on the ridges of the wings.

Houses of Unburnt Brick---Adobes.

On page 47, we asked for information from any who had employed this material in building at the North, and receive in response the following letter from W. F. Pack, Hamilton Co., Ohio. The subjoined responses, in numbered paragraphs, are in answer to several questions which were proposed to him by us after receiving his first communication.—He writes:

"From a wish expressed in the February number, I give my experience with houses built of unburnt brick. We have lived in one for the last four years, and find it very warm and com-

fortable, in almost every respect. The house is two stories and a half high, the walls twelve inches thick, with a rough fair casting of mortar on the outside. It has eaves projecting four feet, and is 40 feet square.

The rough casting which covers the walls on the exterior seldom comes off, and when it does, the broken place is easily mended, by mixing a little coarse mortar and spattering it on, without any other preparation. The house has stood fourteen years, and seems likely to stand three times as many more. Such is our experience; and we sincerely hope this (if you think it worth a place in the *Am. Agriculturist*) will be of some benefit to those desiring to build such houses.

1st.—The manner of making the brick is not different from the manufacture of the common burnt brick; only they are fourteen inches in length, 6 inches wide, and 4 inches in thickness. 2d.—The brick for this house were made in August, and the erection of the build-

ing was commenced in the succeeding autumn.

3d.—The foundation of stone is raised about eighteen inches from the ground all around, so that there is no possibility of water soaking into the brick. The rough casting on the outside also prevents any dampness from entering. A wet brick might crack to pieces if frozen, but an unburned brick will not absorb near so much water as one that is burned.

4th.—The walls are neither stayed nor studded, nor built in a frame of any kind, and are merely put together with mud mortar. Neither sand nor lime being used. The rough casting, however, is of very coarse sand, and strong lime. Very much must depend upon the excellence of the rough casting, and the wall should be left rough that it may hold on.

Walks and Talks on the Farm.

No. 28.

An agent of the Boston Milling and Manufacturing Co. called on me to day in reference to their "Flour of Bone."—It seems that they have invented a mill—designed originally I believe for crushing quartz—which will reduce bones to a much finer condition than any other mill hitherto employed for this purpose. He showed me two samples of the bone dust, one about as fine as coarse bran, and the other as fine as ordinary wheat flour. I have seen calcined bones reduced nearly as fine, for the purpose of making a choice specimen of superphosphate; but never supposed it possible by any mechanical means to reduce unburnt bones to such an extreme state of subdivision.

Since the agent was here, it has occurred to me that the coarse sample may contain an undue proportion of the fleshy matter of the bones, obtained at the expense of the finer sample. But in this I may be mistaken, for I see from a pamphlet he left with me that Dr. Liebig, of Baltimore, found in the "Flour of Bone" 4½ per cent. of ammonia, and 50 per cent. of phosphate of lime. This would show that it is a pure sample of the best quality of bones, if the analysis be of a fair average sample of all sold. The agent, who is a very intelligent man, commenced to explain why fine bones were better than coarse, but I thought this was a point on which nothing need be said. I told him I had such a high appreciation of their invention, and thought so much of fine bone dust, that I would take ten tons delivered at Rochester at \$40 per ton. Two years ago I bought ten tons of coarse bone dust for \$18 per ton, and I thought I was making a liberal offer now. But the price he said was \$70 per ton *in Boston!*

Horticulturists who raise high priced plants and vegetables, or those who care more for the pleasure of raising good crops than for the profit, may perhaps be able to pay such a price for manure, but farmers, except in rare cases, cannot afford to do so. We must bring up our land by slower methods, such as raising clover, and feeding more stock.

I would like to use more artificial manures. High as they are, I would not willingly give them up. There is a fascination about them, that those who have never used them can not appreciate. They are so easily applied, and so quick in their action, that to me they constitute one of the chief pleasures of farming. Agriculture is proverbially slow. In the majority of cases you have to wait some years before you get the *full* benefit of any improvement. But with a *good* artificial manure you see the effect in a few days. It may be in Boston or New York to-day, and before snow flies you may have the whole of it in your barns or cellars in the shape of golden grain or big potatoes. But we cannot afford to pay too much for mere pleasure. We farm for a livelihood. It is pleasant to see a big crop, but if it costs more than it comes to, we shall soon get tired of it.

Manufacturers would do well to bear this in mind. We want their manures. We will take all they can make. There is no limit to the demand. But they *must* be sold at such a price that their use will directly or indirectly afford a *profit*. We want them principally to give us a start in our efforts to bring up the fertility of the soil. We can afford to pay a little more for them, for this purpose, than they are actually worth, but if manufacturers consult their own

interest, they will sell at the lowest rates possible.

When I told the Squire I had offered to pay \$400 for ten tons of bone dust, he shut one eye and remarked internally: "You are a bigger fool even than I thought you were." "Give me plenty of barn-yard manure," he said aloud, "and you are welcome to all your bone dust and guano." I am used to this kind of talk, and pay no attention to it. The fact is, I think *more* of barn-yard manure than he does. The principal object I have in using artificial fertilizers is, to enable me to make more and better barn-yard manure.—The latter costs more than most people think. Ellwanger & Barry, who draw an immense quantity of stable manure from the city to use on their nursery land, tell me that they find that every load of *well rotted* manure, by the time it is spread on the land, costs them five dollars—and they certainly know how to get work done as cheaply as you and I can hope to do it.—Frost & Co., of the Genesee Valley Nurseries, say it costs them \$3,000 a year for manure. Now what is a ton of well rotted manure worth? It contains, say:

10 lbs. soluble phosphate of lime, worth at 6c. per lb.	60
12 lbs. insoluble phosphate of lime, worth at 2c. per lb.	24
15 lbs. potash, worth at 4c. per lb.	60
20 lbs. ammonia, worth at 12c. per lb.	240
	\$3.84

These are all the really valuable ingredients of a ton of manure. The carbonaceous matter has little manurial value, or if it had, it can be obtained on almost all farms at a nominal sum. Apply these figures to a ton of bone dust. It would contain, say:

1000 lbs. insoluble phosphate, at 2c.	\$20.00
90 lbs. ammonia, at 12c.	10.80
	\$30.80

The manufacturers of the "Flour of Bone" may claim that, owing to its extreme fineness, the phosphates soon become soluble in the soil, and should be estimated at 6c. instead of 2c. per lb. Were this the case, a ton would be worth \$70 instead of \$30. But bone phosphate is *not* soluble; and how far this extreme fineness, by accelerating decomposition, favors solubility—or perhaps more correctly speaking, availability—is a matter yet to be tested. I have known mineral phosphate ground very fine, but they have little more immediate effect than so much sand. But dissolve them in acid, and they make an excellent manure. All things considered, I think my off-hand offer of \$40 per ton is about the fair thing. It may prove to be worth more—that is to say, the ingredients may be more readily available to plants—but this is a matter which must be tested in the field. I have estimated it liberally so far as chemistry throws light on the subject.

I am inclined to think the best way to use bone dust is, to compost it with barn-yard manure. In "piling" the manure in the spring, put a layer of manure on the ground six or eight inches thick, and then scatter a little bone dust over it, say at the rate of a bushel to what will make a ton of manure when well rotted. Then throw up another layer of dung, and scatter another bushel of bone dust over it, and then another layer of manure, and so on, until the heap is finished. Let it be turned over in August, and by the latter part of September, after you have got in your winter wheat, it will be in splendid condition for applying to grass land. There is no better top-dressing than this for permanent meadows; or if you intend to break up the meadow the following spring for corn, no better system can be adopted.

The way I pile my manure is, to throw up directly on to the heap all the manure that is

near it, and for that which is too far off to be handled readily in this way, I use a one-horse cart, or an ox cart with a yoke of cattle. In fact, I use both, as in this way you can keep two men loading the cart all the time. Three men and two carts will soon pile up a big heap of manure. Drawing the manure in a cart on to the top of the heap in this way, consolidates it and prevents all danger from too rapid fermentation. Carts are better than wagons, because they are not only handier, but the manure can be dumped.—I piled my manure in this way last spring, but did not use it in the fall. I am now drawing it out on to a corn stubble for potatoes. I draw it while the ground is frozen. I do not think it is usually desirable to plant potatoes after corn, but this is an orchard of apple trees just coming into bearing, and I want to take two hoed crops in succession, and manure the land at the same time for the benefit of the trees.

I know that there is a general impression that manure increases the rot in potatoes, but if it is thoroughly decomposed, I have no fears on that score. I never knew artificial manures to increase the rot. In fact, in an experiment I made some years ago on a warm sandy soil, where I had eight or ten plots dressed with different fertilizers, the plot which suffered most from the disease was that where no manure of any kind was used. I think manure is usually more needed, and will pay better, on potatoes than on almost any other crop. We may just as well raise three hundred bushels per acre as one hundred. Rich, warm, dry soil; early planting; a good variety; and thorough cultivation; these are all that is needed.

In this section, potatoes are said to do best on a clover sod turned over just previous to planting. The usual way is, to plant whole potatoes in hills three feet apart. Planting in hills is less labor than planting in drills, and you can use the cultivator both ways, and thus keep the land clean and mellow with little hand hoeing. It is also less labor to dig them. On the other hand, I think there can be no doubt that planting in drills gives the largest yield, and if the cultivator is used as soon as the rows can be distinguished, and is used once a week as long as there is no danger of disturbing the young tubers, the land can be kept clean with very little hand hoeing.

The fact is, we must give up hand hoeing. A good steel-toothed cultivator, with a strong, steady horse, and a careful driver, is worth a dozen hand hoes among either corn or potatoes. I dislike to see a man putting round a hill of corn with a hoe, going through a set of motions that have been handed down from the days before cultivators were invented. They may have been useful then, but are now entirely unnecessary. There is work enough to be done on a farm without wasting time in such a tedious performance. Let the land be well plowed, and the surface be harrowed and *rolled*, until it is as mellow as a garden before planting, and little hand hoeing will be needed.

I think an improvement could be made in the form of our cultivators. If the outside tooth, that runs nearest the hill, had a straight steel blade with a knife at the bottom turned inside, and a little backwards, so as to cut off the weeds, the cultivator could be run within an inch of the young corn without disturbing it, or throwing up any dirt. Such horse hoes or "scuffles" are used in England among the rows of turnips, and can be guided much straighter than anything we have. With an ordinary cultivator tooth, or even with the inverted mould-board on

the Remington Horse Hoe, it is not easy to see how close you can run to the hill without disturbing it.

A gentleman called here to-day from Cortland County, inquiring for a farm. He had sold his and wanted another in the "fruit region." He had been to look at one in this neighborhood, but the buildings and fences were too much out of repair to suit him. It costs so much to build now that farmers appreciate, as never before, improvements of this kind. I have never known so many inquiries for farms as the present spring. I do not think land has advanced so very much, but it is certainly easier to sell farms than before the war. This man sold his farm for \$80 per acre. He had a dozen cows which he sold at auction, and they averaged \$78 a head!

Milch cows are higher than beef cattle—that is, a cow with a calf will sell for more than the same cow would if well fattened. They are fully 20 per cent. higher than at this time last year. No other branch of farming has paid so well during the last two years as dairying. Instead of buying cows at these extreme rates, however, it will be better to feed those we have more liberally, and see if we cannot get as much butter from six cows as we ordinarily do from ten. If the six cows were fed with *extra* food costing less than half what we should have to pay for four new cows, I feel sure that they would produce more butter than ten cows kept in the usual way.—I can see no reason why it will not pay to feed cows meal, even when they have good pasture. We may not get more milk, but if the cow is a good one, it will certainly be richer. I am feeding my cows, and have been all winter, three quarts of corn and pea meal a day, and propose to continue it after they are turned to grass.

I know there are those who think corn meal is too heating for milch cows—that it will dry them up, or that the cream will beropy. If the cow has plenty of succulent grass, however, I do not see why such should be the case. It is only adding the nutritious matter which is ordinarily deficient in poor grass. You say corn contains a large quantity of oil and starch, and but little nitrogen and mineral matter. This is true, but let me tell you a fact which I cannot now stop to explain: Poor, rank grass contains more nitrogen and more mineral matter than rich sweet grass. I mean it contains a higher *percentage*. It does not really contain more, but having less of starch, oil, etc., the percentage of nitrogen and ash is higher. It does not contain too much nitrogen, but too little starch and oil. Corn meal will supply these.

You don't understand this? You can't see why poor grass should contain more nitrogen than good grass? Perhaps not. Such, however, is the fact. The same is true of poor wheat. It contains more gluten (nitrogen) than good wheat—that is, a higher percentage. It is deficient in starch. If you should take two sheep, exactly the same weight, and kill one while it was thin, you would find it contained a higher percentage of nitrogen and mineral matter (bones) than the other sheep kept till it was quite fat. Of course there would be just as much nitrogen and bones in the latter, but the *percentage* would be less—simply because there is much more fat. It is so of lean grass, and lean wheat. You have the bones and the skin, (the ash and the nitrogen), but you lack the fat.

It would undoubtedly be better to make the grass fat than to try to furnish the fat by giving the cows grain; but you cannot make rich, fat

grass in a month, and unless you have the very best of meadows, you had better feed a little grain till you can improve your grass land. The Doctor feeds his cows meal, shorts, etc., all summer, and gets large returns. I suppose he "slops" them; at least he makes the meal into "pudding" with hot water. This is undoubtedly the better way, but merely steeping the meal in cold water for 24 hours is a great improvement over feeding it dry, or of wetting it just at the time.

If it turns out, however, that corn meal is too heating, I will substitute crushed oats. But I have great faith in corn meal. Many object to feeding horses corn meal in summer on account of its "heating" properties, and yet at the West horses are fed almost exclusively on this grain, and the Third Avenue R. R. Horses in New York are fed more corn meal than hay—if I recollect right, about 17 lbs. of corn meal and 15 lbs. of ripe timothy hay, chaffed. After repeated experiments, it is said this proves to be the best daily diet for a hard working horse. Such may be the case with cows; corn may be heating simply because it is very nutritious.

It is said, you know, that the celebrated Oaks cow, the first year after she was purchased, gave on ordinary food 180 lbs. of butter in the season. The next year she had 12 bushels of corn meal and then gave 300 lbs. of butter. The next year she was allowed 35 bushels, and gave over 400 lbs. of butter! According to this, a bushel of corn meal gave 6 to 10 lbs. of butter. This, at present prices, will give a handsome profit, as butter is high and corn meal very low.

According to the last Census, the yield of butter per cow in the Middle States was only 87 lbs. a year, and in the New England States 75 lbs., and in the Western States only 58 lbs.! Low as are these figures, the returns in 1850 were lower still, showing an improvement. During the last two or three years the high prices of butter and cheese have unquestionably stimulated production. We are feeding higher than ever before, and I never knew so much butter produced as during last fall and early winter. In my own case, we made three times as much butter after October as during the same period the year before.

It is a little risky buying cows at present prices. I am aware that a good cow is worth \$100 at the present price of butter and cheese, and it would pay to purchase freely, *provided* the same cow be worth \$100 next spring. If, however, we should lose \$25 or \$50 on the cow, it will take out a large slice from the profits. In this, as in many other operations, we get a big interest, but lose half our capital. Our safest policy is, to feed the cows we have liberally rather than to buy more.

"But supposing you have more grass than your cows will consume?" Reserve a portion of it for hay. Probably cows will be cheaper next fall and you will be then in a condition to purchase to advantage. If you cannot mow your meadows, keep more sheep. If I mistake not, sheep will be bought reasonably after next shearing. The "gas-tar" Merino fever is abating. The rage is now for dairy cows. But do not be carried away with it. We live in uncertain times. Prices are inflated; they will subside till they find their level and probably go below it.

Think of it. In the fall of 1861, in the dairy districts of this State, old cows were bought by the hundred at from \$8 to \$15 a head, and slaughtered *for beef*! It was at this very time that I urged farmers in the wheat districts to buy cows and pay more attention to the dairy. We need more stock to make manure, and I

thought, and still think, we can make more money from dairy cows than from sheep. But, as I said before, just for the time being it may pay better to buy sheep than to buy cows.

For one, I shall be very thankful when things find their natural level, and we have done with these violent fluctuations. A farmer now-a-days has to study financial questions as much as a stock jobber—in fact more, as he must look farther ahead. I am tired of it, and long for a settled condition of affairs. Then I will keep a good dairy of cows. I believe, on most farms, we can raise as much grain (not as many acres) as we now do and keep ten head of cows on the hundred acres. We shall also raise our own cows and keep a few mutton sheep and some nice "porker" pigs into the bargain.

I have learned one thing the past winter. It is not a difficult matter to fatten cattle if you have plenty of hay and grain. But without hay or roots, no matter how much straw and corn stalks you have, a liberal allowance of grain will not, to state it mildly, fat an ill-bred ox rapidly.

In this section hay, in proportion to nutriment, is an expensive food. Corn is usually much the cheaper article. I do not mean cheaper to raise, for such is not the case, but cheaper at the price at which the two articles are usually sold. In other words, we can sell our hay for more than it is worth—or rather we can use cheaper food. But doing so, however, we should soon impoverish our farms.

If we had plenty of turnips, rutabagas, or mangold wurzel, we could turn out lots of good cattle without hay, and I am satisfied we must raise more roots before we can fat cattle in winter to the best advantage. Strap-leaf, or some other late sown and easily raised variety for use till Christmas; then rutabagas; and in spring mangolds or beets. But we need good cellars and convenient arrangements for gathering, storing and feeding them. They are a heavy crop in proportion to nutriment, and unless the arrangements for handling them are convenient, the labor will soon eat up their value.

I am inclined to think that beets, mangold wurzel and cabbage, are the best "roots" for us to raise in this climate. I raised two thousand head or more of cabbage last year, and propose to raise more this. They are admirable for milch cows in the fall and in the spring. They are about as nutritious as rutabagas, but do not taint the milk, and you can grow, provided the land is rich enough, a far greater weight per acre.

Four or five ounces of seed, sown early in a bed of two or three square rods, will give plants enough for an acre. They need not be set out till all other planting is over. Let the ground be made rich with well rotted manure, and when the plants are set out, put a teaspoonful or so of superphosphate or plaster in or about the hole to give the plants a good start. Nothing so good as superphosphate for cabbage, especially in the seed bed. All the cultivation that is required after the plants are set out is a free use of the horse hoe. This is the main point. You cannot cultivate them too frequently. A horse hoe will stir the ground deeper and more thoroughly than it can be done by hand, and consequently cabbage can be grown as a field crop far cheaper than in a garden. Fresh soil is best, as there is less danger from insects, club-foot, etc. It is said that a rather heavy loam is desirable; but I am going to try them on some recently drained mucky land, and expect a good crop, as the soil is certainly rich. A good dressing of wood ashes would help. It is said to be the best preventative for club-foot.

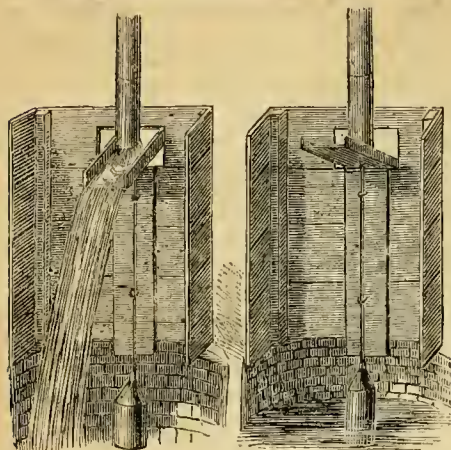


Fig. 1.

Fig. 2.

To Prevent Cisterns Overflowing.

We are indebted to "E. W. L.," of Schenectady, for the following suggestion, which, though directly applicable only to few cisterns perhaps, nevertheless indicates a good means of preventing the overflow of water from cisterns not provided with discharge pipes. Our correspondent says of it: "It costs but a trifle, and is of

great value to any one who has had to get up at night to turn off the water pipe of his cistern, knowing the consequence of an overflow would be a great injury to the cistern at least. A conductor leads from the roof of the house into the cistern box, *B*, and directly under this conductor, and inside of the cistern-box, is a little tin gutter 14 inches long, 3 inches wide, and 2 inches deep, that is fastened as seen in fig. 2, by a hinge to the curb, in such a way that the water flowing into it from above may be turned into the cistern, (fig. 1,) or into a trough on the outside, (fig. 2,) according as the little trough is tilted one way or the other. This tilting is effected by a rod having a float at the end hung upon the underside of the trough, as seen in fig. 2. The weight of the rod and float when the water is low, turn the flow into the cistern, but when the water rises to the full height, the rod being of exactly the right length, the float will rise and turn the water off. The float is a gallon can thoroughly painted."

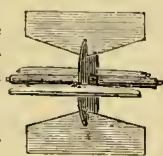
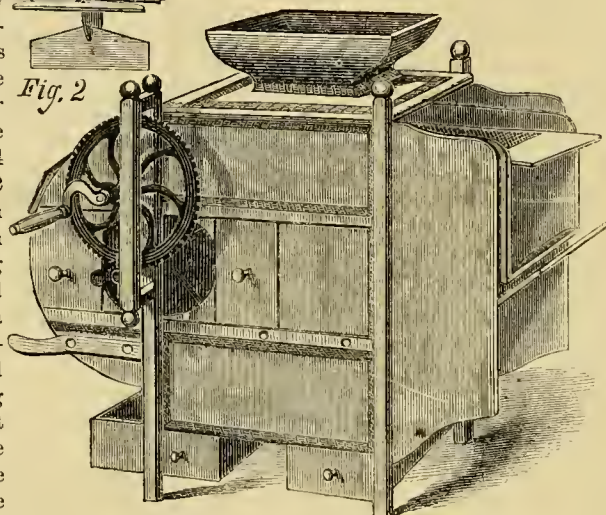


Fig. 2



LEACH'S EVEN BLAST FAN MILL.

aster, and other lighter seeds. This alone is a very great advantage. 3d, The selection of the heaviest and plumpest grains only for seed, is accomplished with great accuracy. From a lot of wheat, which weighed 58 lbs. to the bushel, we believe, Mr. Leach selected for seed a quantity which weighed 65 lbs. to the bushel, passing it through with a strong blast several times. We have seen enough of the operation of the machine to be satisfied that we do not overstate the matter. It was shown at Albany, at the annual meeting of the State Agricultural Society, and elicited high commendation, and greatly pleases practical men of our acquaintance who have it in use. The inventor is Mr. George Leach, of Owego, Tioga Co., N. Y.

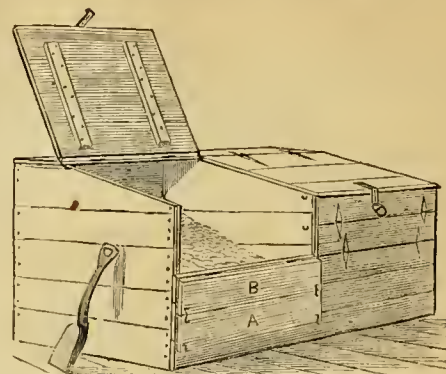
Convenient Grain Bin.

We noticed, at Thorndale, last month, grain bins which recalled painfully the strains of body, and rushes of blood to the head, that are very often experienced, in getting grain, or meal from a deep bin when the supply runs low,

fan when the fan is in motion, the opening being conical. 3d, That the fans being set upon a solid disk, the current of air which enters from one side can not mingle with that from the other side, and so create uneven currents in the blast. The result of this simple structure is, that the blast is an uniform, even one, like the smoothly flowing water of a mill race, while that in an ordinary fan-mill more resembles the turbulent stream which constitutes the wake of a paddle-wheel steamer. The arrangement of screens and sieves differs in no essential particular from those of mills in common use, and any ordinary mill may be altered with comparatively small expense to one of the improved kind.

Now let us consider the advantages. 1st, The work is done better; that is, all the common work of cleaning grain for market. 2d, In selecting seed grain, or grass seed, the results are very marked, when reasonable care is taken. The separation of different grains, wheat from oats, being effected, of course no chaff would be left with the seed, and no cockle, thistle seed, mustard, or charlock. This is not all done by the blast, or all at once, but the separation of the larger seeds is effected by it. The inventor asserts his ability to separate from clover seed every seed of red sorrel, and of course dock,

because in these bins, all such trouble is avoided. We have seen bins in which the top



GRAIN BIN.

one of the front boards was hinged to be let down, when the grain got below it; but in these *two* boards were hinged, as shown in the cut, being fastened up by hooks at the ends, and let down one after the other, as desired. The front edge of the bin was about 4½ feet high.

How to Catch Gophers—Traps, etc.

We of the East only know gophers by reputation. They do things on a big scale out West, and the gopher is the Western improvement on our little blind mole. The improvements—patent, if not patented—are: 1st, in size, the animal being nearly as large as a muskrat; 2d, in sight, for he sees well by day or night; 3d, in amount and quality of food, for instead of eating insects, he eats corn and other grains, and vegetable products; 4th, in his ability to carry off that which he does not eat, for which the 'beastie' is provided with cheek pouches that will together hold nearly a teacupful of grain. He digs burrows, and "ravages" in proportion to his size. It is of course very desirable to know how to destroy these pests, for when numerous, as they are in many localities, they are a serious nuisance, and being nocturnal in their habits and very shy, they are hard to take. For this purpose there have been several devices sent to us. Mr. John W. Barnett, of Pierce Co., Wis., is successful in the use of the common steel trap, arranged as in fig. 1. He digs down a square hole so as to cut a gopher gallery (*A*), a few feet from where it comes out to the light, cleans out all the dirt, and making a depression in the track, sets a steel trap in it, and fastens it with a chain, covering it over with firm dirt. Then he covers the hole with a board (*B*), and throws

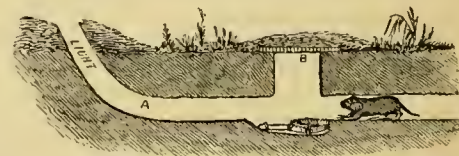


Fig. 1.—STEEL TRAP SET FOR GOPHERS.

earth over it to exclude the light. He speaks confidently of it and says, "just so sure as there is a gopher in that hole you will catch him."

A form of trap or snare for gophers is described and figured by Mr. G. W. Smizer, St. Louis Co., Mo. This is shown in figs. 2 and 3. It will be seen that the apparatus consists of a spring pole (*k*), to which is attached a cord and noose (*i* and *j*), and a string with a trigger (*h* and *g*). This is set in the following manner. A place is dug as wide as the breadth of the spade, and an inch deeper than the gallery. The face of the excavation next the hole is made even and per-

pendicular; then, four inches back the spade is set in until it comes through into the gallery, and after working it a little back and forth, it is lifted carefully out. The hole is then cleared of all earth that may have crumbled down, and

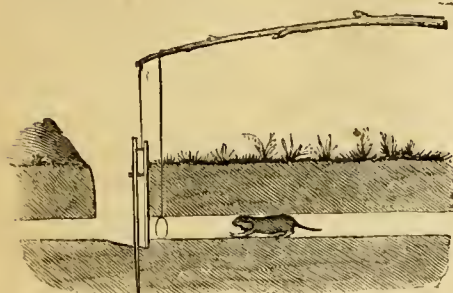


Fig. 2.—GOPHER TRAP.

the wire noose inserted through the cut made by the spade, and spread wide. A stake (D), 2 feet in length, and having a pin (E) through it, and a notch (F) about as indicated in fig. 2, is then driven a little in front of the hole. The board, C, which is about 20 inches long, is then suspended, by the hole B, upon the pin in the stake, close against the perpendicular face, shut-

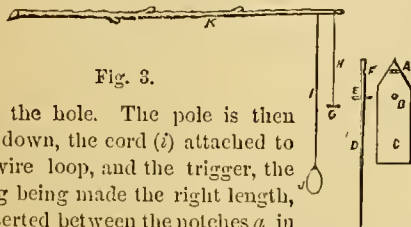


Fig. 3.

ting the hole. The pole is then bent down, the cord (i) attached to the wire loop, and the trigger, the string being made the right length, is inserted between the notches a in the board, and f, in the stake. The gopher touching the board with his nose will release the trigger, and be caught around the body by the noose. Mr. Smizer says: "I have tried many ways to catch gophers, and this is simple, cheap, and sure to catch and kill them, and is the best I ever tried. I caught 45 last spring with three traps; and the whole cost was not 25 cents."

J. B. Quinby, of Davis Co., Kansas, describes his way of killing gophers as follows: "Armed with a weapon something similar to a fish spear, visit the ground infested by them early in the morning (before sunrise), or a little before sundown, and with as little noise as possible, search until you find one of their holes opened. Take your stand back of it, holding your spear within a foot of the hole, and ready poised for action. Soon you will hear the gopher at work, and directly he will come to the surface, pushing his load of dirt before him. As soon as you can see his shoulders, pin him with your spear, and look for more holes, and my word for it, if they are plenty, you can bag more game in an hour than you can with all your traps. Gophers seldom come to the surface of the ground in pleasant weather, excepting for an hour or so morning and evening, and they seldom show more than part of their bodies. After opening a hole a few minutes suffices to throw out what dirt they wish, and they immediately close it up. A little practice will make experts of most any one."

The Weeds of the Flax Field.

The flax crop is liable to be infested by the ordinary field weeds, and besides these, there are two which seem to be quite peculiar to it, the False Flax, and Flax Dodder. It is probable that the seeds of these weeds, being introduced with imported flax seed, vegetate freely, and flourish the first year, but do not perpetuate themselves to any considerable extent in our climate, as do the majority of foreign weeds.

Indeed several of the English writers have recommended the use of American seed as one means of ensuring freedom from these weeds.

FALSE FLAX, also called Wild Flax, and by the rather extravagant name of Gold of Pleasure, is *Camelina sativa* of the botanists. It was formerly supposed that flax degenerated into this plant, just as some persons suppose that wheat turns to chess, or that potatoes mix in the hill. This plant is still more widely separated from flax than the chess is from wheat, and only those persons ignorant of plant structure believe



Fig. 1.—FALSE FLAX.

in these sudden transformations. The False Flax belongs to the *Cruciferae*, or Mustard Family, and in the structure of its flowers closely resembles the Mustard. It is an annual, growing about 18 inches high, with its smoothish stem leaves sessile upon the stem, and having an arrow shaped base. The figure shows the upper portion of a stem somewhat reduced in size, and at the left hand a seed pod of the natural size. The pods are somewhat pear-shaped and bear a sharp point at the top. The seeds are reddish yellow in color, and, in the plant as it grows in this country, not very numerous.



Fig. 2.—FLAX DODDER.

FLAX DODDER, *Cuscuta epilinum*, is a much worse weed than the other. It is a plant of

peculiar habit; starting from the seed in the ground, it pushes up a slender, thread-like, leafless stem, which branches freely and entwines around the flax plant, entangling the plants together. This is not all the mischief it does; wherever the Dodder comes in contact with the flax stem, it pushes out small suckers or feeders, by means of which it draws nutriment from the flax, and is able to grow and flourish even if its root be destroyed. The flowers are very small, and are produced along the stem in small dense clusters of a white color. Figure 2 shows the Dodder of the natural size, with clusters of flowers and fruit. This is one of the most injurious weeds of the flax crop, and the estimation

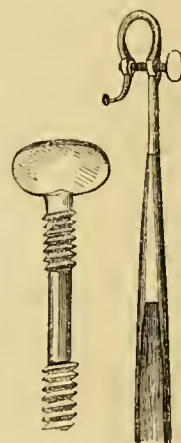


Fig. 3.

in which it is held in England, is shown by the vulgar, but rather expressive names of "devils' guts," and "hell-weed," there applied to it. These weeds being introduced with the flax seed, the cultivator should take pains to select pure seed. A sample of flax seed when spread out thinly upon a piece of white paper, allows the naked eye to see if any foreign seeds are present. Figure 3, gives a seed each of Flax (largest), False Flax, and Dodder, equally magnified, the Dodder the smallest, and rough. Properly adjusting the fanning mill, and passing the seed through several times, cleans it quite well.

Leading Staff for a Bull.

A great deal depends upon having a safe leading staff when a man handles a bull. Bulls have a way of being very gentle and docile at times, thus throwing their keepers off their guard, and then they very often take a notion to have a little rough play, if it may so be called. The result may be, and has often been, that a man has been killed or greatly injured, perhaps by a young animal he had not the least fear of. Mr. Thorne, of Shorthorn fame, has never had serious accidents of this kind occur, because he believes in "making assurance doubly sure," and never trusting a bull at all. The leading staffs used by his herdsman struck us as needlessly secure at first sight, but we were assured that long experience had proved that spring clasps, though never so well made, did occasionally give way, and that in using the staff with the clasp attached by three or four links of chain, a bull would sometimes get the advantage, and crowd his groom most dangerously. They have adopted, therefore, a staff tipped with a strong hook of the best iron, wrought in the shape shown, and closed by a screw passing through both the shank and the tip of the hook. The thread on the screw is first cut the whole length, and then it is turned or filed off in the middle portion, leaving the shaft of the screw a plain bolt, except at the ends, as seen in the left-hand figure. When the hook is to be opened, a few turns are sufficient to allow the screw to slip back, and it can not fall out, being prevented by the threads at the end.



Agricultural Education—Work

That the book worm will make a poor farmer, as a general rule, every body knows. However, he has certainly little wisdom who discards book-gained knowledge. To be a successful farmer the boy must be early trained to independent observation and judgment, to a reliance upon himself, and to see that success or failure results from causes, which, if he knows enough, he may regulate. This can never come satisfactorily without a thorough knowledge of work. Every farmer will agree with us in this, and we have rarely known one who did not put the *work* theory into practice—and often with most indiscreet energy. Boys are ambitious and delight in praise. They begin tough and hearty;—they scorn the light work very soon;—they aspire to do “the work of a man”—to be worth more to their fathers than any men they can hire;—they learn quickly how to do every kind of work. They hoe, and rake, and bind, and swing the ax, and fodder the stock, and look after the hired men; they save the farmers many steps, for—the boys never get out of breath, or never say so. They do harder work, and aspire to do the hardest. At 16, they take their places with the mowers: at 17, they are expert cradlers, and pitchers, and do every kind of work so well that their praise is on every body's lips, and the horny handed men look on in astonishment to see the feats of strength and endurance which they show. The result is in a *majority* of cases that the boys break down; they strain themselves and grow out of shape, have fits of fainting in the field, headache, giddiness, blindness; grow thin and pale, and take to their books, perhaps to novel reading; lose interest in the farm, and so after all their brilliant promise, go into some other business, or make very poor farmers. We can name a score of very much such cases.

There is a remedy—and it is a simple one, namely: more *brain-work* and less *hand-work*.

This is easier stated than carried out, for the ambition of a good boy to work is constantly excited on the farm, by the results of what work does, continually before his eyes, and by the presence of laborers who will inevitably encourage the greatest outlays of energy and strength on his part. He has no such incitements to study on the farm, and in fact, much work and much study are entirely incompatible. The weary body demands rest, in which the mind must participate. Nevertheless, the evil of over-working boys is so great that we must, even again and again, caution parents, and the boys themselves, against it, as one notable cause of so many inferior farmers.

But very few farmers can afford to give their sons anything more than what is called “A Common School Education”—that is, as regards book learning. Almost none, however, are so straightened in means that they can not have good books and papers. They can throw upon their sons the responsibility of learning what other people think and say about this or that crop, or practice, or way of treating crops, or about the insects which may annoy them, and about a thousand-and-one things which may be made the subjects of investigation upon the farm.

Besides, a farmer needs a knowledge of many other kinds of work—not straightforward farming—and the young farmer's winters can hardly be spent to better advantage than in acquiring familiarity with one or more trades. The writer well remembers the months spent in the cabinet maker's shop in learning the use of tools. He

was not of much use to the cabinet maker, but the knowledge gained has been worth a great deal to him ever since. We advise any young farmer who can get such a place to give two or even six months labor gratuitously to the blacksmith in his shop, or to the carpenter, or to the saddler, or to the wheelwright, and to do so every winter, until a good insight is gained of these trades. In a stony country, where wall laying is an important accomplishment, time should be taken to learn this, and there is some opportunity almost every season, to learn practically the principles of framing houses, or joiner work. The use of this practical education in different kinds of work does not make a farmer a “Jack-of-all-trades,” but it makes him at least a better judge of other men's work, and a much better and “handier” farmer.

Temperature at which Seeds Germinate.

The celebrated Swiss botanist, M. A. De Candolle, has published an account of numerous experiments upon the temperature at which seeds will germinate. We give a few of his results, with respect to well known plants, reducing the temperature to the Fahrenheit scale. The seed of common White Mustard will germinate at or a little below the freezing point. While white clover remained dormant at $41\frac{1}{2}^{\circ}$, it germinated when the temperature was raised only one degree above that. Indian corn would not start at 42° , but germinated at a temperature very near 48° . Melon seeds refused to germinate at 55° , but did below $62\frac{1}{2}^{\circ}$. While there is a limit of temperature below which each particular seed will not germinate, there is also a limit in the other direction, and seeds fail to start when the temperature is too high—the point, as in the other case, varying with the species; the greater part of some seeds of white clover did not germinate above $82\frac{1}{2}^{\circ}$. “Thus seeds only germinate between certain limits of temperature, and those which can only do so within narrow limits are least able to extend themselves geographically.”

General View of Southern Agriculture.

BY JOSEPH B. LYMAN, RECENTLY OF NEW-ORLEANS.

[NOTE.—The interest manifested by many of our subscribers to know more of the Southern States, with a view to going thither to make there homes for themselves and their children, induces us to publish the following letter, repeating our own opinion, previously expressed in the *Agriculturist*, that it is very desirable for Northern families to locate in groups of several together, for the sake especially of society, schools, postal facilities (taking turns to go for the mails), neighborhood libraries, and religious exercises, and last, not least, for the maintenance of a healthy public opinion, at least, among themselves. Northern men will encounter some acrimony and bitterness of feeling, expressed in looks, words and deeds, but with good principles and kindness, they will live it down.—Eds.]

The advantages that are presented to the farmer and the capitalist, through the recent social changes that have occurred in eleven great States of this Union, are a matter of constant inquiry. What class of lands have been opened by the action of the war and its settlement, the price of good lands in that region, the productions for which it is best suited, the climate and salubrity of various sections, are subjects of great interest to our young men, the disbanded soldiers who are exchanging the

musket for the plow, and to the emigrants who constantly swarm upon our shores.

However the social and political status of the African may be affected by Congressional action, or by the vote of States, two great changes have been wrought by the destruction of slavery, whose influence upon the future of these States in the increase of material welfare, and all the elements of prosperity, are incalculable.

First.—The dishonor that has hitherto attached to manual labor, as the badge of social degradation, has been forever wiped out.

Second.—The great system of centralization and monopoly, that massed the lands of the South in farms of from five hundred to five thousand acres and more, if not wholly broken up, has suffered such a change, with the change of the labor system, that it must decay, and the lands be divided, as in the more Northern States, into farms that average from 60 to 80 acres. With the ownership of the soil by the intelligent laborer, erecting there his permanent home, the most beneficial changes in the economy of agriculture will be introduced. The slave-working planter felt little or no attachment to the soil from which he derived his revenues. Land with him was like the plow, something to be used, worn out, and then thrown away. Under the new system, based on sounder ethics, the soil will be regarded as it is in England, and in the most advanced parts of this country, as something to be kept, improved, not abused, and handed down to descendants in such a condition that by their labor and economy it may continue to yield its successive and abundant harvests.

By looking at a map, it will be seen that a little below the southern line of Tennessee there is a dividing ridge, north of which the waters make their way to the Ohio, and toward the South the region drains into the Gulf of Mexico. This line represents the cotton zone, north of which, generally speaking, cotton is not a profitable crop, at common prices, and south of which it is the ruling staple, and in some parts, almost the sole agricultural product. But nearly half the area of the Southern States, and more than half the population is north of the cotton zone. In other words, one half of the Southern States is a grain-growing and stock-raising country, where the agriculture does not differ in any essential respect from that of other parts of the country. The immigrant from the Northern States to this region, is not a pupil, but a teacher of the old resident. He brings improved methods of culture, labor-saving machines, and a far better system of economy.

The chief advantage that he can enjoy in the southern latitudes, is the mildness of the climate that requires so much less provision in order to winter his stock, and the corresponding length of the summer, that enables him to take, in many instances, two crops from the same soil. To obtain the best conception of the climate of the grain-growing parts of the South, you are to conceive of a New-England winter, with the months of December, January and February left out. Take the weather of our November and our March, and you have the winter of Southern Kentucky, Tennessee, Northern Virginia, and North Carolina. It is a winter in which two months of feeding will suffice for sheep and young cattle, a winter which allows of work on the face of the soil, in clearing, fencing, ditching, and hauling of manures every month, and frequently every week, from the time the leaves fall until grass comes again. The longer summers allow a crop of corn to mature, if planted at once after wheat harvest in June.

Thus the southern farmer can, if he will, labor the whole year round, on the face of his farm, instead of having it locked from him by five, and sometimes six months of frost and snow; and the amount of stock he can keep is limited by the extent and fertility of his pastures, rather than by the crops of hay and roots which he raises, for every acre he has in good meadow, will at least winter one horse or cow.

As a general rule, very few southern lands have ever been developed by any but the rudest and most wasteful agriculture. Out of a farm of 200 acres, as a general rule, about 100 have at some time been partially cleared and plowed, the other 100 is covered with primitive forests.

In Tennessee, the population is about one-fourth as dense as in New York. In Kentucky and Virginia, the ratio is a little higher, but in Arkansas and Texas, much lower. In short, the South can support a population five times as great as now exists upon it, before the density on an average reaches that of New York. Five millions of free laborers, on fertile soil, and with the advantage of genial climate permitting farm labor almost the whole year round, can find employment, homes, and competency, as the reward of labor on the soil just cleared of a national curse by the national arms.

The Cultivation of the Fig.

Last autumn we mentioned the receipt of some fine figs which were grown in the open air, and since then we have had several requests to know how to cultivate the fig tree. While in the warmer States it will grow as a standard, in the colder ones it must be kept so dwarf that whoever would sit under his own fig tree must take a rather low seat. In any case the fig can not be fruited at the North without a certain amount of trouble, and it will only find a place in the grounds of those who are willing to give it the necessary care. Plants are to be had from the nurseries, or they may be grown from cuttings of the last year's wood, 8 or 10 inches long, taken with a small piece of the wood of the previous seasons growth at the base. These grow readily in a moderate hot-bed, and with tolerable certainty in the open air if put out after the ground is well warmed, and in a shaded situation. The fig strikes readily from layers, and early fruiting plants may be obtained in this way. A good mellow soil that is not too moist or highly manured, suits the fig better than a very rich one. It should be trained as a low branching bush, with the branches not so crowded as to deprive the leaves of plenty of air and light. The great tendency to make a luxuriant growth of wood is checked by root pruning, an operation which tends to keep the tree dwarf and render it more fruitful. Root pruning is done at the time when the trees receive their winter protection, for unless properly secured from the severe cold of winter, the trees will be killed down to the root, if not entirely destroyed. One method is to cut a circle with a sharp spade at a distance of 18 inches or two feet from the trunk, severing all the roots, then lay the tree down and cover the whole, root and branch, with several inches of soil. Another plan is to cut around the tree and remove it with a ball of earth to the cellar, where it will winter in safety, care being taken that the roots do not become dry. In either of these modes of protecting, the root is annually pruned. Where a barrel or hoghead is placed around the tree, as is sometimes practised, and filled in with earth—or in milder localities with

straw, the root pruning should not be neglected. The roots tend to run to a great distance, and if they remain uncut, will not only rob other plants but cause an undue growth of wood. The manner of the fruiting of the fig is not generally understood. It is popularly believed, and is so stated in some books, that the fig does not flower. This idea comes from the fact that the flowers are hidden, as they are very small, and produced on the inside of a hollow branch or receptacle, as was explained and illustrated in Oct. *Agriculturist*, 1864. The fruit grows, at the axils of the leaves, one or two appearing at the base of each leaf. The branch continues to grow throughout the season, and the buds produced on the lower portion of that growth attain a considerable size, and form what is called the second crop. These seldom ripen, and though they survive the winter if properly protected, they shrivel up and fall off in spring. On the other hand, the buds on the upper portion of the branch being small, survive the winter, and it is from these that the crop, or first crop, of the next season is produced. As in cold climates only one crop can be procured with any certainty, and this is only to be had upon the growth of the previous season, it is necessary to remove all the young fruit that appears upon the wood of the present season's growth—not all of the buds, but all those which manifest a disposition to grow. When these are removed, other buds are formed in their places, and at the end of the season the buds are all small enough to pass the winter in a dormant state. The fig is well suited to pot culture, and may be grown in large pots or tubs, which may be removed to the cellar for the winter. A number of varieties are sold, among the hardiest of which are, the Brown Ischia, Brown Turkey, and White Ischia. The usual nursery price is from seventy-five cents to \$1.00 each.

The Burning Barn.—[See next page.]

There is something so terrible in uncontrolled fire, that no one can contemplate the bare possibility of its gaining sway in his own or his neighbor's buildings without a shudder. In fact, men too often, in the presence of such a calamity, shrink back oppressed with the feeling of their own powerlessness, and in vague horror, witness the destruction which they think they can not hinder. Or they rush to battle with the flames, fighting them with water, snatching objects from their scorching embrace, and in hand to hand conflict, proving how little the might of man can do to stay their progress.

We sincerely hope that no reader of the *Agriculturist* may ever hear the alarming and heart-sickening cry, "*Our barn is on fire!*" but, fires will occur, and our readers will be there to help the sufferers. So as we always mean to take a practical view of things, we will of this.

When a barn is discovered to be on fire, there is something to do; and what is done must be quickly done. The point is, to do exactly the right thing, and to do the best thing first. In the very incipency of the fire, there is some possibility of putting it out, but after it has acquired any headway, it must have its sweep through the building in which it originated, at any rate. This is true in 99 cases in 100. In a barn, fire does not smoulder and creep along under floors, between partitions, etc., as in a house, but it leaps from floor to rafters, and runs along the mows and wraps the whole interior in sheets of flame, in less time than it takes to write about it, after it first becomes of notice-

ble proportions. The stables are usually so situated that they may be entered from side doors, and are likely to be the last to be thoroughly on fire. So the first thought should be the stock. Neat cattle, sheep, and hogs, need only to be released and turned loose. They will get out of the barn quickly enough, and look after themselves. It requires, however, both coolness and daring, to enter the cattle stalls, and to be efficient when there. Many a man is in such a hurry that he can do nothing, he can not untie the simplest knots, nor cut the ropes, nor open the stanchions, and so the poor beasts burn to death. In many cases, it is essential to safety, that a wet cloth (part of a sheet is best, though a thin blanket will do,) should be thrown over the head so that the heat may be borne, and the smoky air be breathed with impunity.

Horses, however, can not be trusted to leave the barn alone. They will, indeed, often not budge an inch, but stand and be burned to death, though free to go, and they will sometimes, (and several instances have fallen under our own observation), after being led away from the barn and turned loose, in their excitement turn back and dash in again never to come out. After the fire has gained exciting headway in the vicinity of the stable, those who release the horses should take with them blankets, or cloths of some kind, which should be wet, if possible; but don't wait long to wet them. Then these being thrown over their heads, they may be usually led away without difficulty. If any do not start then, take the twist on their upper lips with a rope or halter, and bring them to their senses with pain—whipping and kicking will do little good. The horses must be left in a lot with a high, tight fence, or in a neighbor's barn, or yard, and some one ought to watch them. While the stock are being saved, the women and those not engaged, should get ready all the old carpets, blankets, buckets, etc., at hand, and with these protect the house if it is in danger, and to this the attention of the men should next be turned. In some cases this is the first thing to do, but usually there is little danger, until the roof of the barn falls in, and a very great heat is thrown out. Then, should the wind be toward the house, there will be danger from sparks, and some one should be constantly upon the roof with water and a dipper, to put out sparks and brands that may fall, and others should watch the cornices and eaves from adjacent windows, to dash water where the wood begins to scorch, or hang over wet carpets.

Next in order of importance, usually, the feasibility of controlling the spread of the flames to other buildings, is to be considered. Sheds, fences, etc., which connect the burning building with others should be at once cut and cleared away. Do not attempt to pull over a shed until all the posts are cut off. A few good ax men will do this very soon, and then a pair of cattle or two with a chain properly attached, will drag it over and haul it out of the way. Fire hooks are of course not to be had, but a strong plow, with the coulter off, is not a bad substitute. The point may be jammed into a roof or into a mass of timber so as to hold as well, and be much more easily attached than a chain could be. If a stack is in the way, and there is help enough, it may be torn down and carried off by hand toward the wind, and away from buildings in a very short time. Detached buildings may be saved by wetting, by blankets, carpets, etc.

Whoever goes to a fire in the country should take an ax, a bucket, and a horse blanket, or piece of carpet. These are the things of most use.



F. Forster Del.

See opposite page

W. Gordon - Boston

The Christmas Rose.—(*Helleborus niger*.)

There are some plants which possess a hardiness truly remarkable. Among these is our common Chickweed, which, with its delicate and thread-like stem, will withstand the severest cold, and only needs warmth enough to melt the snow which covers it, to induce it to open its tiny blossoms. Similar to the Chickweed in respect to its winter flowering is the Christmas Rose, a plant which has been in cultivation for more than two centuries, and is yet so little known that it has all the rarity of a novelty. We have derived so much gratification from a clump of this plant during the past season, that we are induced to bring it to the notice of our readers, for it is certainly not deserving the general neglect into which it has fallen. The proper stem of the plant is beneath the surface, and from it arise the large leathery evergreen leaves of the shape shown in the engraving, which is only about *half* the natural size. The flower stems also arise from below ground, and they bear from one to three large white flowers, which afterward are tinged with pink. The showy part of the flower is in this case the calyx, the petals being very small, and to a careless observer hardly to be distinguished from the stamens. It succeeds best when partially shaded from the intense heat of summer. It is propagated by dividing its roots in the spring. The name Christmas Rose is given to it as indicating the time at which it flowers in England. In this country its blossoming is determined by the severity of the winter. It will sometimes bloom in November, and again its buds will lie dormant until March, and not unfrequently mild weather in midwinter will induce it to open.

Select Pears—Manning's Elizabeth.

The two summer pears recommended for general cultivation by the Greeley Prize Committee were, Rostiezer and Manning's Elizabeth. The Rostiezer was described and illustrated last month (page 103). Manning's Elizabeth, though first brought to notice in this country, is really of foreign origin. About 30 years ago Messrs. Kendrick and Manning, well known horticultural pioneers in Massachusetts, received from Doct. Van Mons, of Louvain, a stock of cions from his unnamed seedling pears. The original trees from which these cions were taken, were soon afterward destroyed, and the whole stock remained in the possession of Messrs. Kendrick and Manning. The pear under consideration was produced from one of the cions thus obtained, and it was named Elizabeth Van Mons, by Mr. Manning, but the name that has been

adopted by common consent is Manning's Elizabeth. For a figure and description of this variety, we are indebted to Hovey's elaborate work, the *Fruits of America*, in which the standard

remarkably beautiful, with a deep yellow skin, and a bright red cheek. Often it is peculiarly marked; when about two-thirds of its size, one-half of the pear,—the blossom end,—in most of the specimens, assumes a thick russet covering, which usually terminates in a complete circle around the middle of the fruit, and it generally retains this color, even at maturity. It is a most profuse bearer, being literally loaded with pears: It succeeds well as a dwarf upon the quince, and comes into bearing early.

"Fruit, small, about 2 inches long, and 2 in diameter: Form, obovate, very full around the crown, tapering to and ending obtusely at the stem: Skin, fair, little rough, rich lemon yellow, brilliantly suffused with crimson on the sunny side, through which appear deeper colored specks, becoming pale in the shade, the end next the crown often covered with thick russet: Stem, medium length, about three-quarters of an inch long, rather slender, and slightly inserted in a shallow cavity: Eye, small, open, and a little sunk in an open, shallow basin: Segments of the calyx short: Flesh, yellowish, coarse, melting and juicy: Flavor, sugary, rich, and

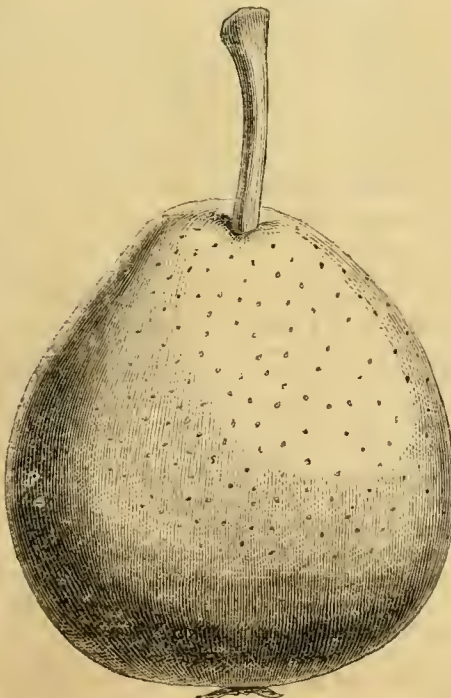
pleasantly perfumed: Core, large: Seeds, rather large, brown. Ripe from the middle to the last of August."—A very desirable pear.

The Eggs of Insects.—Resisting the Cold.

One of the essentials in successful warfare, is a knowledge of the strategy of the enemy. Insects vary so much in their habits, that it is necessary to closely study each particular kind, in order to know at what period it may be most readily destroyed. Some of the most destructive insects, such as the cankerworm, pass the winter in a chrysalis state, hidden in the earth or elsewhere, and deposit their eggs upon the twigs only a short time before they are hatched. Hence no amount of scraping and washing the trunk will affect insects like these. The curculio and apple-moth can not be readily destroyed in the egg. These insects deposit their eggs either upon, or in, the young fruit, and they can only be attacked in their perfect or winged state, or while they lie dormant in the chrysalis. But our object was to call attention to the remarkable property, possessed by the eggs of some insects, of resisting the effects of low temperatures. In some cases, the crop of insects is provided for in the eggs which are laid the year before. These, as in the tent-caterpillar, figured in January, (p. 3), are usually deposited on the young twigs, where the newly hatched insects will find their food close at hand. In this exposed situation, the eggs, the contents

CHRISTMAS ROSE.—(*Helleborus niger*.)

varieties of fruit are well represented in colored plates. These plates are accompanied by detailed descriptions of the fruits thus illustrated,



MANNING'S ELIZABETH.

and by interesting bits of pomological history. "The Elizabeth is a very fine early pear;

of which are semi-fluid, pass the severest winter without loss of vitality, and what is more remarkable, without rupturing the shells by the freezing of their contents. The eggs shown in the engraving are those of the katy-did, or some allied species of grasshopper, and are represented about one-fourth larger than the real size. These are of a slate color, and are deposited with great regularity in two rows, each egg

overlapping its neighbor; and they have not the mutual protection which the crowded ones of the tent-caterpillar afford one another. Those in this specimen, though it had been exposed to a cold of 10° or 15° below zero, were perfect, and will doubtless hatch in the spring. It is well known that liquids expand in freezing and with great force. It is also known that water, if kept perfectly quiet, may be cooled to several degrees below the freezing point, and still remain liquid, but that the slightest disturbance will cause water thus cooled to assume the solid form at once. One of our naturalists—Prof. Wyman, we believe it was—has shown that the contents of the eggs of insects remain liquid during the most severe cold, as long as they are undisturbed, but if, while at a low temperature, the shell be punctured by a needle, they immediately become solid, expand, and a portion is projected out through the orifice thus made. With regard to the eggs above figured, we have never known them to be very abundant. The katy-did and its relatives of course eat something, but they more than compensate for that by their summer nights' song.

Setting up and Preserving Insects.

BY DOCT. F. HODGE, HUDSON, OHIO.

[The following very practical directions have been furnished by Doct. Hodge, and will be acceptable to those who desire to make a collection of Entomological specimens. The present article refers to the preservation of butterflies and moths only, but we hope to have the manner of preserving other insects described.]

"If the moth sits with its wings roofed, a touch near the head with a brush or swab soaked in chloroform will drop him—Use a camel's hair pencil with the brush cut short, or, what I prefer, a small hickory stick with saddler's silk bound upon the end after the manner of a broom, the ends cut off even, and the strands of silk combed out with a pin. This makes a durable swab, which the chloroform will not spoil very soon. Then take the moth under the

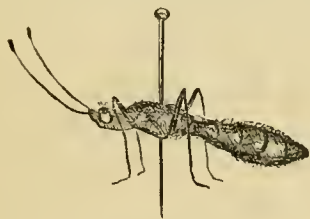


Fig. 1.

wings between the thumb and first finger, and insert a needle, dipped in a solution of Cyanide of Potassium, under the chin, and run it lengthwise through the body, taking care that it does not strike out; recharge the needle and repeat the operation until the moth is dead.—The solution is made with one drachm of the Cyanide

of Potassium in one ounce of water. It is well to recollect that this is highly poisonous. The needle used for applying the solution is a largest

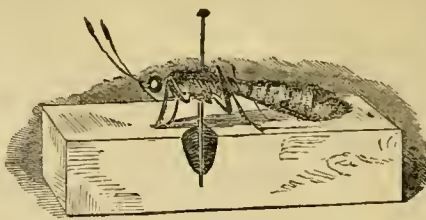


Fig. 2.

sized sewing needle, and for the largest moths, a large darning needle. Drive it *point first* into a small wooden handle. Use the blunt eye-end for the piercer; it will kill in half the time that the point would, as it makes a larger hole, and carries more poison. The large moths and sphinxes will oftentimes refuse to die under the above treatment, but it is the best we can do for them, unless their bodies can be stuffed. Butterflies and moths that rest with their wings folded together, will need no chloroform. Take such insects carefully between the thumb and fore-finger, and proceed at once to poisoning.

STUFFING.—With small, straight surgeon's scissors, cut open the abdomen and a small portion of the thorax; with forceps, remove the eggs and other contents, and then with small pledgets of cotton, swab out what remains carefully and delicately. Make the stuffing by rolling between the thumb and finger an oblong ball of cotton, one-third smaller than the abdomen was before it was opened, wind it with

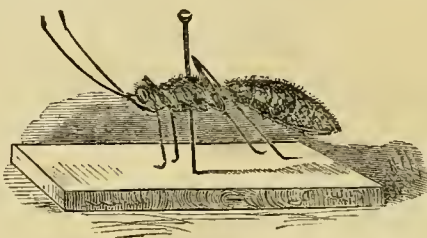


Fig. 3.

thread to preserve its form, roll it freely in powdered arsenic (arsenious acid), and insert it carefully, pulling up the sides with the forceps, or a pin head. Then put in two or three stitches with a fine needle and thread, each stitch separate, cut off each stitch as inserted, leaving the ends of good length, and tie none until all are in. Tie the middle stitch first, cut off the ends close, and then do the same with the others.

SETTING UP.—For large-bodied moths, have a pine board, with a groove not over one-third the diameter of the body of the moth. For butterflies, and a great many moths, I prefer the plain, flat board, with no groove. If the groove is too deep, it gives a bad unnatural look to the wings. Bore a small hole with an awl or knife blade in the bottom of the groove, or where the pin is to go, say one-eighth of an inch deep, but not through the board. This hole (see fig. 2) is used, in order that, when the specimen is dry and placed in the cabinet, the body and all may stand away from the cork or board in which the pin is inserted. In putting the pin through the moth, be careful to have it perpendicular, with the point coming out on the under side, nearer to the extremity of the abdomen than the place of its insertion, or top, as in figure 1. Introduce the pin into the awl hole in the board and press it in firmly. Figure 2 shows the body of the insect as placed for drying, and fig. 3, the same when dried and placed in the cabi-

net. Spread the wings with pins. With the Lunas and most of the large moths, introduce the pins in the fore-wings in the sort of hard band or edge of the wings. The back wings of the large moths will almost always tear when bringing them to place, but with proper care this will do no harm. The tearing can be prevented somewhat by inserting the pins slanting forward as is shown in figure 4, which represents an Atlanta butterfly set up for drying. When the moth is dry, in two weeks or more—never less—turn the pins, used in the wings, around in their holes, before attempting to draw them out; this prevents tearing the wings, and leaves as small a hole as possible. All the large

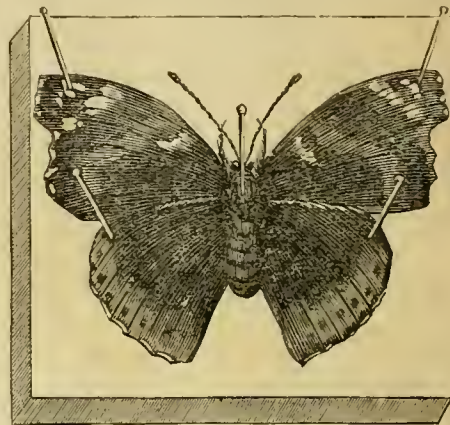


Fig. 4.—ATLANTA BUTTERFLY.

moths and sphinxes should be stuffed, but if successful in killing the sphinxes at the first trial, they may very likely be successfully dried without stuffing, especially those which have been captured, but not so likely with those that have been raised. If thorough poisoning does not kill the insect, stuff it by all means. Removing the contents of the abdomen and stuffing with arsenic, is certain to kill them *dead*. When the body is stuffed, be careful not to leave any open rings upon the back; if by bad handling there should chance to be one or more, try to smooth them out, by careful pressure with the cylinder of a lead pencil, or by placing the finger upon the extremity of the abdomen, and shortening it up. Figure 5 is Saturnia Io, showing the

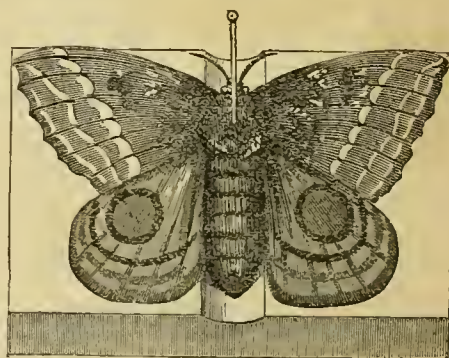


Fig. 5.—SATURNIA IO.

manner of using a grooved board for large bodied moths. The antennæ, of large moths especially, should be propped up by a strip of blotting paper, half an inch wide and bent into the form of fig. 6. This paper is secured to the board

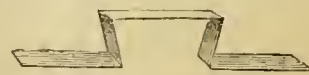


Fig. 6.

by pins, and the antennæ are supported upon it. This should be removed the third day, before the antennæ become so dry as to be brittle."

Raspberries and Blackberries.

It is pleasing to notice that a share of the enthusiasm that has attended the culture of the strawberry and grape, is being diverted to the raspberry and blackberry. And well it may be, for they are the fruits that bridge over the interval between the strawberry and the early grapes. For a selection of the best varieties of raspberries, we gave three years ago the following: Hornet, Franconia, Brinckle's Orange, and Belle de Fontenay. These are all excellent and well known sorts; the first three require covering in winter. A variety called the Philadelphia is very popular among the growers in New Jersey. It probably does better upon their light soils than elsewhere. Near New-York it has not proved valuable. Mr. Parry, of Cinnamonson, N. J., a grower of large experience, prefers it to all others as a market variety, and states that he had a yield of 220 bushels to the acre the second year after planting. At the West the Purple Cane is the favorite red variety, where it is considered the best for market, and does not require covering in winter. The improved varieties of the Black-Cap have now become so popular, that nurserymen find it difficult to keep up with the demand. They have indeed valuable qualities; they need no covering in winter, do not send up any suckers, are great bearers, and the fruit is so firm that it reaches market in good condition, and it finds a ready sale. The Black Caps, and the crosses of them also do not produce suckers, which in the ordinary red sorts causes them to multiply rapidly, but are propagated by layering the tips of the new growth in September, or whenever it becomes firm. We recently saw a communication in the London Gardeners' Chronicle, in which a cultivator complained that some choice seedlings obtained by a cross with the Black Cap were likely to be lost, as they would not be propagated. Above is a Yankee trick which is commended to our brothers over the water. Doolittle's improved Black Cap is the one most cultivated. Miami Black is said to keep in bearing two weeks later, and the Golden Cap, a yellow variety, is also grown. Of Blackberries the New Rochelle and Dorchester are the best known. The Kittatinny, a new sort, has every good quality of the New Rochelle, keeps longer in bearing, and is a better fruit. Wilson's Early is another new variety which finds favor with those who grow for market, both on account of its earliness, and the fact that it ripens up its crop at once. Both these new sorts are rather too scarce, as yet, to allow of setting large plantations of them, but they are well worthy the attention of fruit growers. Good soil and good culture are needed for both the raspberry and the blackberry. In gardens, blackberries do well against a fence, and they can be made to form a barrier which marauders will respect. It is common to grow them in stools set 6 or 8 feet apart each way, and train the canes to a strong stake. Raspberries are set in rows six feet apart and the plants three feet apart in the rows. Fall planting is preferable, but plants may be set early in the spring before they have made much growth. The following, from A. M. Parry, a fruit grower at South Bend, Ind., gives his method of field culture. It came too late for insertion in October, the month for which it was intended:

"Our objection to setting in the spring is, that the young and tender sprouts which start so early are apt to get broken off. We prefer setting in October, and pass over the ground

early in the spring and loose up the ground with a fork down to the roots, which will cause every root to send up their sprouts and make a full growth the first season. We set rows 6 to 8 feet apart, and 3 to 4 feet in row. In August cut off the tip of the new growth, which causes them to branch out, and if branches grow too spindling cut them off also. Cut out all old wood in the fall and mulch heavy with corn stalks, straw, or any coarse litter to protect from the drouth. We have lost hundreds of dollars buying different sorts of raspberries, but find none that will stand through our changeable winter but the Black Cap family, Purple Cane and Catawissa. These possess all the desirable qualities sought for in a raspberry. As to blackberry, if there are any varieties that are better than the New Rochelle or Lawton and Dorchester High Bush, in every respect, we are yet to find them."



A Troublesome Weed—Bur-grass.

(*Cenchrus tribuloides*.)

Among the specimens sent us last year for determination, we find the Bur-grass, of which we give an engraving. Though not as common as some other weeds, it is in sandy places, especially near the sea coast and the shores of the great lakes, often abundant and troublesome. The engraving shows only a small branch of the natural size; the plant is very branching, and spreads to the diameter of one or two feet, each branch terminating in a spike of several prickly heads, or burs. Each of these burs is a sort of hardened cup, or involucre, which encloses several flowers, and is armed on the outside with numerous curved prickles. One of the flowers, removed from the bur, is given at the bottom of the engraving. The prickly nature of the bur, joined with the fact that, when ripe, it is readily detached from the stem, renders it an exceedingly annoying plant, as the burs catch upon the clothing, get into the hair and wool of animals, and make their

presence manifest in the most disagreeable manner. We well recollect the trouble this plant gave us while we were traveling in the far West; its burs would work into our blankets, and it was almost impossible to remove them. It is very fortunate that this ugly customer is an annual, and though its prickles provide it with unusual facilities for spreading, it may be kept in subjection, if sufficient care be taken. Our illustration will enable any one to recognize the plant when young, and destroy it before its seeds ripen. In some parts of the country it is called Hedgehog-grass, and at the South, where it is more common than at the North, it is frequently called Cockspur-bur.

Mr. Bolmer's Peach Orchard.

In a very long communication, Mr. Lewis Bolmer, of the Great Miami Valley, presented to the Cincinnati Horticultural Society, his method of managing peach trees. As the article in question is very much in detail, we extract the essential points from his report. After giving an account of his early experiments and failures, Mr. B. states the following as the manner in which he has successfully and profitably treated an orchard of 1300 trees:

"In setting out his trees, Mr. Bolmer plants shallow. In light soils, that are sandy and gravelly, he digs the holes a foot deep; in light loam, six inches; in heavy clay he plants on the surface, unless it be on a hill-side, when he makes a slight excavation; in wet places, or hollows, he raises the ground a foot or more for the trees before planting; the trees are all surrounded with mounds of earth; this applies to all sorts of fruit, and while it protects them from the frosts and winds of winter, it also deters the rabbits from injuring the bark.

The branches are formed at two feet high, which is the top of the first mound. The second year this is raised another foot, covering the lower parts of the limbs, and making the hillock three feet high. No other protection is needed, as the extremes of wet or dry, heat or cold, are regulated by this mass of earth, if it be properly made, and kept smooth and sharp at the top. The worm cannot gain access, and neither man nor beast can injure the bark nor split down the branches, neither can the wind blow the tree over. The third and fourth years the mound is made still larger, so that when finished they will be between 4 and 5 feet high.

For older trees—if more than three or four years—he advises cutting back pretty freely as a preparation for this earthing process, which is aided very much by plowing both ways toward the rows, thus preparing the soil and leaving so much less work for the shovel.

In this case mulching should be freely applied, to protect the roots from the sun. The work may be done at any time when the ground is not frozen or the tree laden with fruit, and even then if the earth be brought to the tree from beyond the roots.

This banking up of the soil exposes it to the action of the frost, and it is thought that the mounds freeze solid to the tree, and remain frozen until spring, especially if well mulched, and the buds are kept back until late in the spring, and escape untimely frosts. It is claimed for this plan, also, that there is a vastly increased surface exposed to the heat and air for their happy influence. It is found that the earth is literally filled with fine fibrous feeding roots by the third or fourth year, which are ready to make the most of the 'situation.'

WINTER PROTECTION FOR THE BUDS.

Sometimes he bends the lower limbs to the earth, and puts a weight upon them to keep them there; very often the snow furnishes the needed covering, and in northern climates this will be found sufficient. But in our less snowy latitude, where we often have great depression of temperature without any such covering to the earth, we need some artificial protection. For this purpose, Mr. Bolmer uses long open boxes, supported by four legs of the requisite height, say from two to five feet, to adapt them to the different parts of the trees. Into these the branches are gathered and crowded and pressed down, and covered with straw, with a little earth or something else to keep them in place. This is done in November, and they are left until late in March or April, when the exposed part of the tree is in full bloom; these protected buds are then beginning to swell, and they will be two or three weeks later in their blossoming, and may thus escape a spring frost that might destroy the earlier bloom and fruit. Mr. Bolmer cuts back his peach trees every second year, or if they bear too full, he shortens them every season, to thin out the fruit, taking off say one third of them, so as to increase the size of those that are left. This he considers a very paying operation, on account of the increased size and corresponding price of the fruit; nor is it a very expensive operation, if, as he says, one man can trim from fifty to one hundred trees a day. To recur to the mounding work, he does not give the absolute expense of the operation, which each must calculate for himself, reckoning local cost of labor, etc., but he claims that it pays, and that it preserved the longevity of his trees, while other orchards in his neighborhood have died out and disappeared.

The original tree upon which he first operated, now twenty-seven years old, is still living. Though not able to give the cost per tree or per acre, Mr. Bolmer feels satisfied that the expense will compare favorably with the constant plowing, and tending, and worming of a peach orchard, attended with uncertain results and frequent failures, because mounds once made are a permanent protection from the worms and insure a crop, so that he considers his plan the cheapest and most profitable method of growing fruit that has yet been discovered, and

he claims that fruit produced in this way is worth one-third more on account of its superior flavor, size and color."

A Brilliant Bedding Plant.

(*Gazania splendens*.)

Of late years many plants formerly considered as only suitable for green-house culture, have been found to grow with perfect success when placed in the open ground, and even attain a luxuriance of growth, and give a profusion of

upper surface, while below they are very nearly white. The flowers are produced singly upon long stalks, and are of the size and shape shown in the engraving. It will be seen that this flower belongs to that very large family, the Composite, of which the Sunflower and Marigold are common representatives. The rays in this flower are of a rich yellow color; each one of them has, near its base, a spot of purplish brown, so dark that it appears to be black, and upon each one of these dark spots is a clear white marking. These spots together form a

circle or crown of exceeding brilliancy. A great merit in this plant is the long duration of its flowers; they open only in a strong light, and close at night and on dark days. The same flower will open and display its beauties day after day, for about a week. The plant is a native of the Cape of Good Hope, and though tender, is not destroyed by the first light frosts of autumn. With this, as with other bedding plants, cuttings should be made during the growing season for a stock to keep through the winter. It succeeds well in ordinary garden soil. The name, *Gazania*, is said to come from the Persian word for *riches*, while the specific name, *splendens*, is so near the corresponding English word as to need no translating. The botanical name is not inappropriate, for the plant is both rich and splendid.

Forest Trees for Shelter.

The importance of sheltering fruit trees from the violence of winds, is shown by the attention given to the subject by the Western Horticultural Societies. At the last meeting of the Illinois State Horticultural Society, the merits of the different forest trees were discussed almost as fully as those of fruit trees, and a list of those best for shelter adopted with equal formality with the lists of fruits. We enumerate the trees selected, placing those first which the Society consider most valuable. Black Walnut, Hickory, Butternut, Wild Cherry, Silver Maple, Elm, Ash, Sugar Maple, Ash-leaved Maple, Basswood or Linden, Honey Locust, Oaks (Red, White, and Bur), Larches, Red Mulberry, Catalpa, Chestnut, Lombardy Poplar, Silver Poplar, and Osage Orange. The Cottonwood, and White and Yellow Willows, were recommended, if nothing else could be had. The Evergreens recommended were:



GAZANIA SPLENDENS.

bloom, far in advance of any results that can be reached in pot culture. These bedding out plants are in great demand, and the establishments devoted to producing them are, so to speak, regular plant factories, where the specimens are turned out by hundreds of thousands. One of the plants which has been thus popularized and removed from the exclusiveness of green-house society to the promiscuous assemblage of the border, is *Gazania splendens*, of which we here give an engraving. The plant branches freely, its weak stems laying prostrate upon the ground; the leaves are rather thick in texture, and of a dark green upon the

sed almost as fully as those of fruit trees, and a list of those best for shelter adopted with equal formality with the lists of fruits. We enumerate the trees selected, placing those first which the Society consider most valuable. Black Walnut, Hickory, Butternut, Wild Cherry, Silver Maple, Elm, Ash, Sugar Maple, Ash-leaved Maple, Basswood or Linden, Honey Locust, Oaks (Red, White, and Bur), Larches, Red Mulberry, Catalpa, Chestnut, Lombardy Poplar, Silver Poplar, and Osage Orange. The Cottonwood, and White and Yellow Willows, were recommended, if nothing else could be had. The Evergreens recommended were:

Arbor Vitæ, Red Cedar, Norway and White Spruce, White, Scotch, Austrian and Stone Pines, and Hemlock. The nut-bearing trees have generally so long a tap-root that they are difficult to transplant, and it is recommended to plant them where they are to grow. They are best planted in autumn, or in early spring, if they have been kept through the winter in sand. It unfortunately happens that with the exception of the Evergreens, few of the seeds of the trees in this list are to be had of the dealers. Ash, Larch, Catalpa, Honey Locust, Linden, and Sugar and Ash-leaved Maple, we find in the catalogue of one of our principal seedsmen. The seeds of the Silver Maple and Elm are ripe the latter part of May, or early in June, and should be collected and sown at once.

The seed of Evergreens is best sown in a bed surrounded by a frame, and so arranged that it can be shaded; no heating material is required, but the soil should be fine, light, and rich. The shading is best done by a slat-work of laths. If sown in an open bed, cover the surface with leaves or light hay, which is to be removed as soon as the plants are up. The requisite shade may be given by sticking leafy brush upon the south side of the bed. The seeds should be covered with but a very slight layer of fine soil.

THE HOUSEHOLD.

Parasitic Animals in Pork.

(*Trichina spiralis*.)

BY THOMAS HAIGH, M. D.

[Various accounts have recently appeared in the daily, and other papers, of a disease, caused by eating pork that was infested by a microscopic animal. Under the head of Trichinosis, and Trichina disease, some alarming and somewhat sensational statements have been made. As these have abundant foundation in fact, and thinking it best that our readers should know just what causes the disease in question, we present an account of the Trichina, prepared at our request by Doct. Thomas Haigh, of the N. Y. College of Physicians and Surgeons.—Eds.]

To the Editor of the American Agriculturist:

Your request for a popular account of Trichina is cheerfully complied with. The daily papers have already made the public acquainted with the fact that in some parts of Europe, in Germany especially, the Trichina disease has prevailed to an alarm-



Fig. 1.—TRICHINA CYSTS.

ing extent, and the number of cases reported in this country show that it exists here to an extent, which, though not to a degree to cause alarm, is sufficient to demand attention. The disease is caused by a microscopic animal, and the points which interest your readers are, what the animal is, how it is introduced into the system, and how it may be avoided. The existence of the animal has long been known, and it has been found in the flesh of persons who had died of widely different diseases, and in whom, before death, its presence had not been suspected. The animal is called *Trichina spiralis*, and has been noticed by Owen, Virchow, and other European writers, from time to time during the last thirty years. The most complete account of it will be found in a paper by Prof. John C. Dalton, of the N. Y. College of Physicians and Surgeons. This paper was published in the Transactions of the N. Y. Academy of Medicine, and I am allowed by its author to use his drawings in illustrating this article.

The Trichines are found in the muscles of man and of swine, enclosed in small sacs, or cysts, which

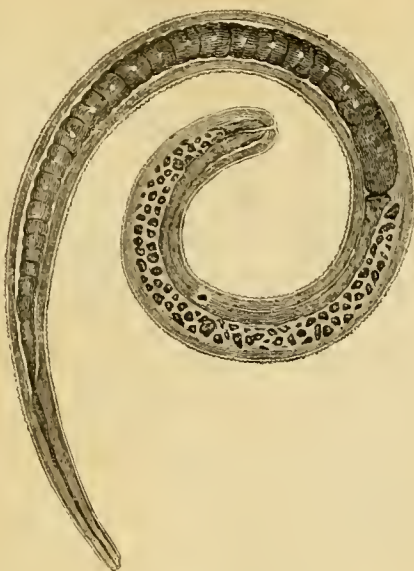


Fig. 2.—MAGNIFIED TRICHINA.

are imbedded among the muscular fibres. These cysts are 1-30th of an inch long, and 1-100th of an inch broad; they taper at each end, and are usually prolonged at each extremity into a very fine thread-like appendage. Figure 1 shows these cysts as they appear in a magnified fragment of muscle. Each sac, or cyst, contains a single Trichina,—rarely two,—coiled up in a spiral form, making about three turns, so that the head is nearly opposite to the tail. It is a round worm 1-28th of an inch long, and 1-620 of an inch in thickness. When magnified about 200 times, it appears as in fig. 2, which shows its structure so clearly, as to require no further description. As far as is known, the animal is sexless. The cyst which contains the animal is believed to be formed from a minute blood vessel, which by the presence of a foreign body like this parasite, becomes changed and mostly obliterated. The cysts in the human muscle do not always have the long appendages of figure 1, but appear like figure 3.

The number of these animals is sometimes astonishing. They have been found so abundantly in ham that the number was estimated at 85,000 to the cubic inch, and they have been found to be nearly as numerous in human muscle. This brief description, with the figures, will give a sufficiently clear idea of the parasite, as it is found in the human muscle and also in the swine's muscle.

The manner in which it is introduced into the human system, is this: When pork, infested with Trichines, is taken into the stomach in a raw, or imperfectly cooked state, the sac containing the little worm is broken up by the process of digestion, and the animal is liberated from its imprisonment. It awakes from its dormant condition, rapidly develops, and in a period of 8 or 10 days it brings forth its young alive. The young Trichines, which are produced in great numbers, immediately penetrate the walls of the intestines, and getting into a blood vessel, are conveyed along by the blood to all parts of the body. They are finally lodged in the capillary blood vessels, where they gradually become encysted, or closed in, by the change in the vessel, as already noticed, and in this condition they lie dormant for an indefinite length of time. The perforation of the intestines by such a multitude of worms, as well as the presence of so many minute foreign bodies in the minute blood vessels produce serious disturbance, though not always fatal consequences.

The Trichina is an animal which only develops and, as far as yet known, reproduces itself in the intestines of, and afterwards lies dormant a long

time in the muscles of man and of swine. It now remains to show how it finds his way into the flesh of swine. It is believed that of those which develop in the human intestines, only a small part bring forth their young, but that a large share of the full grown ones pass off in the feces, and are thus enabled to find their way to the stomach of the pig, where they produce young, which are distributed through the muscular tissue of that animal, in the same manner as they are introduced into that of man.

Trichines, then, come into the human system through eating pork, and as that meat forms a large share of the animal food of our laboring population, it becomes important to know how to distinguish infested meat from that which is free. Unfortunately this can be done only by the aid of a microscope, or at least a good magnifier. Where the animals have been for a considerable time encysted, they may be seen more plainly than those recently introduced, as the cysts become white from a deposit of calcareous matter. The figures show the appearance of well defined cysts, but the recently introduced parasite can only be found by those accustomed to microscopic observations.

Unfortunately the salting and smoking of meat do not destroy the Trichines, and most of the cases of sickness caused by them have been traced to the eating of raw, smoked ham. It is probable that the parasite cannot live when long exposed to the temperature of boiling water. When a ham is boiled whole, it is probable that the interior of it does not become heated to the boiling point, and that the Trichines in the center may remain alive. Broiling and frying, as they are generally done, do not heat the meat through with sufficient thoroughness to destroy the parasite. As a precaution, all who eat pork in any form should take especial care that it is thoroughly cooked. The only positive security is, to obtain from pork altogether. From what has been said of the manner in which the parasite finds its way into the stomach of the pig, it will be seen that swine kept in pens run much less risk of becoming diseased than do those which are allowed to range at will.

About "Plated Ware."

When silver is dissolved in nitric acid and mixed with cyanide of potassium, a clear liquid is produced which contains the silver in the form of cyanide of silver. If the two wires from a galvanic battery be inserted into this liquid a little distance apart, the current of electricity that passes through the liquid from one wire to the other, decomposes the cyanide of silver. The pure silver metal goes to one of the wires and is deposited on it in a solid form. This takes place at every point where the wire touches the fluid containing the silver in solution. The silver is deposited in inconceivably small atoms, innumerable millions of them in every second. In a single minute enough of these atoms will be laid on to present to the eye a perfect coating of pure silver, that will completely hide the ware. If a larger piece of metal, as a fork, spoon, or teapot be attached to the wire and immersed instead of the wire, every point of the larger metal touched by the liquid will receive the coating of silver. As long as the article is in the solution and the battery in action, the depositing of the silver will go on.

The practical point we wish to bring out is, that the silver is deposited in such small particles, or "atoms," that the coating will appear perfect, though the thickness may be thinner than the ten-thousandth part of the thickness of a sheet of paper. To the eye the appearance will be the same, whether the silver coat be only a millionth part of an inch in thickness, or a heavy coat that will endure hard wear for months, or years. A wholesale dealer of this city, who supplies manufacturers of plated ware with materials, noticed that one of them was buying a great quantity of lead, and inquired the reason. The answer of the purchaser was, that he made plated ware for the gift enterprise men, (such as we described on page 86 of the March *Agriculturist*, under the head of a "Swindling Shop"). The lead is moulded into form, and then



Fig. 3.—TRICHINA CYST.

dipped for a minute or two into the galvanic silvering solution, giving it a perfect but *very thin* coat.

The truth is, that a very large proportion of the plated ware sold, is but *very slightly coated*. A silver dollar can, by the above plating process, be so spread out as to give an actual silver covering to thousands of yards of surface, while by a continuation of the same process, it may all be deposited on a square inch. The thickness of the layer depends wholly upon the will of the manufacturer. Silver deposited at the rate of half an ounce (50 cents) on a gross (144) Teaspoons, will allow burnishing the same as pure silver. The ordinary cheap plated ware runs $\frac{1}{2}$ to 1 ounce to the gross. Common fair plate is 2 ounces to the gross. Good plate 4 ounces. The best plate, or "Sheffield Plate" is at the rate of 8 ounces of silver to 12 dozen teaspoons. This, on white metal, will wear next to solid silver; and as the work is but slightly increased in making the best, this is by far the cheapest to purchase.

The plain inference from the above is, that it is only safe to purchase such ware of men well known for integrity and reliability. In this, as in all other departments of trade, integrity and genuine Christian principle are of the highest importance to the business man himself, and to his customers.

In buying plated ware, it is important not only to obtain a good thick plate that will endure wear, but also to secure the body or base metal as near like silver as possible. The best plating will in time wear off at the corners, or at points where it is most exposed. If the base metal be copper, brass, or inferior German silver, the least abrasion of the silver coat will be shown; while on a white base, the loss of the silver coating will not be noticed, except upon careful inspection. A white metal, well plated, is only second in value to a solid silver article. The same remarks apply to gilded, as to silvered articles. (The Tea Sets, in our Premium list, were offered with the greater confidence, because we know the manufacturer, and because they are plated upon a very white metal.)

Teach the Children to Draw.

Nearly all children show a propensity to make pictures on their slates, or on pieces of paper. This should be encouraged. It should not be allowed to engross time devoted to other school lessons, but should come in rather as recreation. Their pictures will doubtless at first be rather uncouth—houses top-sided and topsy-turvy, trees stiff and dead, the men and women any thing but ideals of grace and beauty. You may smile at these rude beginnings, but don't discourage them. One or more of these children may develop into artists of eminence; and all of them may at least become men and women of taste and judgment.

This fondness for drawing should be guided by a teacher. Give the pupils a few elementary lessons. First, teach them to draw straight lines, and then to connect them into squares, triangles, etc. Next, teach them to make curves, circles, etc. Proceed from this to making fences, houses, trees, animals, rocks, and the like. The majority of the pupils will not care to go any further in "the fine art." A few, however, will go on, and go beyond the lead of parent and school-teacher; they will need no further encouragement: indeed, you cannot hold them back. Watch the career of such, and you ere long may perhaps hear of the exploits of a Cole, a Durand, a Kensett, or a Huntington.

Yet it is not so much after all for these geniuses that we would urge giving attention to drawing, as for the majority, who will thereby learn to observe, will cultivate their ideas of proportion, fitness and beauty. The mechanic, the farmer, every man of business, has frequent occasion to make drawings of objects, and it is of great value to him to be able to do so without employing a professional draughtsman. Almost every body travels now-a-days, and it is very useful and pleasant to be able to make sketches of the scenery through which one is passing, even if it be but in outline. By all means, let the children draw, and teach them how to do it.

Vinegar from Sorghum.

J. S. Coles, of New Jersey, writes to the *American Agriculturist*: "Some five or six years ago I raised a lot of cane for the purpose of making molasses, but as we had no Evaporators here then, we did not succeed in making a good article. I let one barrel (38½ gals.) of the juice as it came from the cane remain in the barrel for nearly a year without examining it, when I found it to be fair vinegar; the next summer it was a splendid article. We put up our pickles, peppers, tomatoes, etc., with it, and it kept them well. We have been using it ever since with equal success; for table use we weaken with water, as it is too sour of itself."

Cellars Poisonous.—At this season of the year, it should be specially remembered that the cellar of a dwelling house is very likely to be a source of disease to the whole family. The remnants of vegetables stored during the winter begin to decay on the approach of warm weather, and the exhalations from these, with the chilly dampness, are liable to produce sickness. Many a family has attributed to "Providence" the disease caused by the poisonous miasms arising from the neglected cellar. Every cellar should at all times be kept clean by the removal of all vestiges of decaying vegetables, fruits, and food. A coat of strong lime white-wash upon the walls and ceiling, at least once a year, or better twice a year, will add greatly not only to the healthfulness of the cellar, but will also make it much lighter and more cheerful.

Unbolted Flour the Most Healthful.—Having been raised in a good wheat country, we can not well overcome an early attachment to "mother's nice white bread." Yet science plainly teaches that the most healthful bread is made from wheat ground without separating the bran. The coarser portions of the bran keeps the finer particles of flour separated, so that the gastric juice of the stomach more readily penetrates and dissolves the mass, and hence is better for digestion. These coarser particles also promote the healthful action of the intestines, and prevent constipation, which is one of the prolific causes of disease in these days. It would be far better, doubtless, if every flour bolt were removed from our grist-mills, and people consumed the meal of the whole wheat kernels, just as the several parts are combined naturally. Taste depends mainly upon habit; those accustomed to the unbolted flour eat it with a relish.

Value of Apples as Food.—Liebig says: "The importance of apples as food has not hitherto been sufficiently estimated or understood. Besides contributing a large proportion of sugar, mucilage, and other nutritive compounds in the form of food, they contain such a fine combination of vegetable acids, extractive substances, and aromatic principles, with the nutritive matter, as to act powerfully in the capacity of refrigerants, tonics, and antiseptics, and when freely used, at the season of ripeness, by rural laborers and others, they prevent debility, strengthen digestion, correct the putrefactive tendencies of nitrogenous food, avert scurvy, and probably maintain and strengthen the power of productive labor."—The same qualities are found in most other ripe fruits.—**SUGGESTION.** To day we bought at a fruit stand an apple of moderate size and of fair eating quality, for which we paid five cents. Will it not pay to plant more apple trees, so long as the short supply enables retailers to get half a dime apiece, even in scarce seasons?

Cranberry Sauce.—To 3 quarts cranberries carefully picked over, well mashed and drained, and placed in a kettle, add 2 quarts of crushed or best Santa Cruz sugar; add 1 quart boiling water; stew them quickly till they are thoroughly cooked; turn them into moulds, if you choose. Do not stir them while cooking, but shake the kettle round. Put alternately fruit and sugar. It is a great mistake to cook them till they lose their splendid color.

BOYS & GIRLS' COLUMNS.

The Game of Checkers or Draughts.

HISTORICAL.—(Continued from page 107.)—The modern Egyptians, who use pieces similar to their predecessors, play the game as in this country and Great Britain. By the Greeks, the invention of Draughts, as well as of dice, and many other things, was poetically ascribed to Palamedes, one of the heroes in the expedition against Troy, 1193 B. C. Plato, however, attributes the invention to the Egyptian, Theuth. Homer, in the *Odyssey* describing Minerva's arrival at the palace of Ulysses, in Ithaca, says: "There she found the haughty suitors, some of them were amusing themselves before the gates, with Draughts setting upon the hides of oxen they had stolen."

LAW OF THE GAME.—(Continued from page 107.)

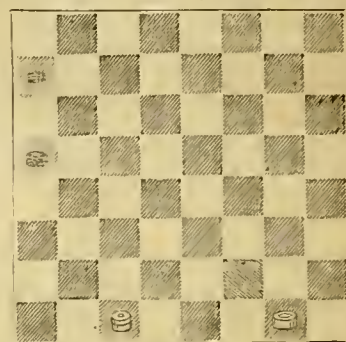
10. After the first move has been made, if either player arranges any piece, without giving intimation to his opponent, he shall forfeit the game; but, if it is his turn to play, he may avoid the penalty by playing that piece, if possible.

11. After the pieces have been arranged, if the person whose turn it is to play, touch one, he must play it or forfeit the game. When the piece is not playable, he forfeits according to the preceding law.

12. If any part of a playable piece be played over an angle of the square on which it is stationed, the play must be completed in that direction.

POSITION NO. 4.—TO BE WORKED OUT.

Black.



White.

White to play and win.

Solution to Position No. 3. (See March No., page 107.)

<i>Black.</i>				<i>White.</i>				<i>Black.</i>				<i>White.</i>					
1-1	to	5	8	to	11	22-24	to	27	28	to	24	25	to	28	29	to	32
2-5	"	9	11	"	15	23-27	"	32	24	"	28	25	"	32	30	"	34
3-9	"	14	15	"	11	24-32	"	27	28	"	32	26	"	32	31	"	35
4-14	"	18	11	"	16	25-27	"	24	32	"	28	27	"	32	32	"	36
5-18	"	15	16	"	20	26-24	"	19	28	"	32	28	"	32	33	"	37
6-15	"	11	20	"	24	27-19	"	15	32	"	28	29	"	32	34	"	38
7-3	"	7	24	"	19	28-15	"	10	25	"	24	30	"	32	35	"	39
8-7	"	10	19	"	23	29-10	"	6	24	"	19	31	"	32	36	"	40
9-10	"	15	23	"	27	30-11	"	10	19	"	24	32	"	32	37	"	41
10-15	"	19	27	"	32	31-10	"	15	24	"	28	33	"	32	38	"	42
11-19	"	24	32	"	28	32-15	"	19	28	"	32	34	"	32	39	"	43
12-24	"	27	28	"	32	33-19	"	24	32	"	28	35	"	32	40	"	44
13-27	"	31	32	"	28	34-11	"	16	28	"	19	36	"	32	41	"	45
14-31	"	27	23	"	32	35-16	"	23	12	"	8	37	"	32	42	"	46
15-27	"	23	32	"	28	36-23	"	18	8	"	4	38	"	32	43	"	47
16-23	"	18	28	"	24	37-18	"	14	4	"	8	39	"	32	44	"	48
17-18	"	14	24	"	19	38-6	"	1	8	"	11	40	"	32	45	"	49
18-6	"	10	19	"	23	39-14	"	9	13	"	6	41	"	32	46	"	50
19-10	"	15	23	"	27	40-1	"	10	11	"	16	42	"	32	47	"	51
20-15	"	19	27	"	32	41-10	"	15	16	"	20	43	"	32	48	"	52
21-19	"	24	32	"	28	42-15	"	19	16	"	24	44	"	32	49	"	53

(a) It requires every move made in the solution to win. Various stages of this position frequently occur, but this is placed far back purposely.

GAME NO. 4.—LADY AND LADY OPENING (*)

<i>Black.</i>			<i>White.</i>			<i>Black.</i>			<i>White.</i>		
1-11	to	15	23	to	19	20-6	to	10	(g) 27	to	24
2-8	"	11	22	"	17	21-11	"	15	3	"	7
3-9	"	13	17	"	14	22-10	"	14	19	"	10
4-14	"	17	21	"	11	23-8	"	11	7	"	16
5-15	"	18	26	"	23	24-12	"	28	10	"	6
6-13	"	17	19	"	15	25-23	"	32	6	"	2
7-4	"	8	(a) 24	"	19	26-32	"	28	2	"	6
8-6	"	9	28	"	24	27-14	"	18	6	"	10
9-2	"	6	(b) 25	"	21	28-15	"	23	10	"	14
10-9	"	13	(c) 32	"	28	29-23	"	27	31	"	24
11-17	"	22	15	"	30	30-23	"	19	14	"	17
12-6	"	15	19	"	10	31-22	"	26	30	"	16
13-11	"	(d) 24	24	"	19	32-13	"	22	16	"	11
14-15	"	24	28	"	19	33-22	"	26	11	"	7
15-7	"	11	(e) 14	"	9	34-26	"	30	7	"	2
16-5	"	14	10	"	7	35-20	"	26	2	"	6
17-3	"	10	21	"	17	36-24	"	22	6	"	9
18-14	"	21	23	"	7	37-21	"	25	9	"	13
19-1	"	6	(f) 7	"	3	38-25	"	30	-and wins by		

the same play of Position No. 2.

the same play of Position No. 2.

(*) Is so called from the fact of its being the favorite of Lord and Lady Cathar, of Scotland, over seventy years ago. It is formed by the first five moves. (a) 23 to 19, draws. (b) 15 to 10, or 32 to 28 draws. (c) 30 to 25, draws. (d) 12 to 16, White wins. (e) 21 to 17, draws. (f) 20 to 25, Black wins. (g) 27 to 24, draws. (h) 27 to 23, draws. The move in game (27 to 24) loses.

Puzzles for Sharp Eyes.

Men think they can trust their eyes to tell them the truth, and they are generally right, but an educated eye will discover many things which an unskilled one would not see; so that the eye needs much training to make it tell "the whole truth, and nothing but the truth." A sailor accustomed to watch from the mast head for objects at a distance, will readily see things not visible to a landsman. An artist, who has long made a study of pictures, will detect faults or beauties in a painting or engraving, which most people would not notice. So a Naturalist will perceive curious things in flowers, leaves, insects, stones, etc. One needs to look at many things from different positions, before all which they contain can be perceived.—Two pictures, fig. 1, the "Singular Sign," and fig. 2, "An Enemy in Camp," very well illustrate this fact. The first one looks like only a mixture of lines and blots; yet it contains information which has

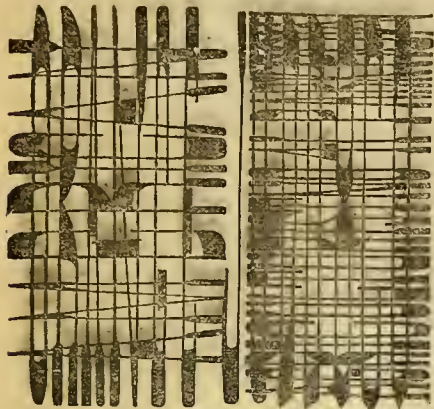


Fig. 1.—THE SINGULAR SIGN.

probably proved beneficial to many of our readers, being the sign of a well known firm in this city. Fig. 2 plainly shows that the poultry are alarmed, and careful eyes will find what frightens them. Next month we will make the matter plainer for those who fail to see it.

Good Mottoes.—A youth of our acquaintance has the following, written in large, plain letters, and pasted up in his sleeping room where it can be plainly seen while dressing, and an earnest prayer is always offered at the bedside, for help to keep the resolutions:

"(1.) I will endeavor this day to do nothing which I believe I ought not to do.—(2.) I will omit nothing which I ought to do.—(3.) I will not parley with temptation, and thus allow it to get the better of me, but will be careful to be on the right side, following the first intimations of conscience, and avoiding what may PERHAPS be wrong."

Another motto which is pasted up by an older friend, in like manner, reads: "WATCH and PRAY—which implies that I am first to Watch myself, to do all I can to act right, and to avoid wrong doing; and then God, if I seek His help, will supply what strength I have not; He will not carry me, but He will always aid me."

How Shot are Made.

This morning, for the twentieth time perhaps, we went out to gratify a country friend, who had a great curiosity to see one of the "Shot Towers" of New-York, and it occurred to us that many of the boys of the great *Agriculturist* Family, and perhaps some of the girls, as well as men and women, would like to know a little more about how shot are made.—First, then, there is a high brick tower, like a great tube set on end, with circular stairs running around the inside, all the way to the top, leaving an open space down the center four or five feet across. There is a hoisting arrangement on one side of this for carrying lead and coal up to the top. At the bottom of this opening is a large vessel of water; and at the top a place for melting lead. The lead is melted and poured into a pan with holes in the bottom, like a tin colander or sieve. The melted lead runs through and drops in little round globules which

fall down into the water. Small shot require to fall 60 to 70 feet; the largest size, 150 to 175 feet. When they reach the water they are so cold and hard as not to flatten. Some drops are long, and very often two or three run together, and some hit the sides of the tower and are flattened, so that the mass in the water is a mixture of round shot of various sizes, and irregular pieces of lead. These are dipped out and dried, and then poured upon the upper end of a long table made of several boards set inclined or "slanting," each board a little lower than the one next above it, and with a small space between the ends of the boards. The round shot roll rapidly down, leaping across the open spaces, and fall off the lower end into a box. The irregular pieces of lead, and the shot not quite round, go slower and fall into the openings, or lodge on the table and are swept off. The round shot are put into the upper drawer of a swinging box or cabinet, with sieve-bottom drawers, one above the other. The top box, No. 1, catches all the shot of one size; the next catches those one size smaller, and so on down to the bottom, where are found the finest shot, no larger than mustard seed, indeed some of them look like fine sand. The different sizes of shot are then put into cylinders with some black lead, and the cylinder revolved for 15 or 20 minutes, which polishes the surface and gives the shining black coat we see on them. They are next put in strong bags and are ready for market. It is a curious fact, that while pure lead will not run in drops, but in streams, the addition of only one pound of metallic arsenic to about 600 pounds of melted lead, makes it flow readily and fall in beautiful drops.

How to find an Unknown Number.

The following tables will enable a person to discover any unknown number not larger than 63, in the following manner: Let some one think of a number and inform you in which of the columns of the table it is contained. Then by adding the figures at the top of those columns you will have the desired number. Thus, suppose you ask a young lady of 35, to show you in which columns

1	2	4	8	16	32
3	3	5	9	17	33
5	6	6	10	18	34
7	7	7	11	19	35
9	10	12	12	20	36
11	11	13	13	21	37
13	14	14	14	22	38
15	15	15	15	23	39
17	18	20	24	24	40
19	19	21	25	25	41
21	22	22	26	26	42
23	23	23	27	27	43
25	26	25	28	28	44
27	27	29	29	29	45
29	30	30	30	30	46
31	31	31	31	31	47
33	34	36	40	48	48
35	35	37	41	49	49
37	38	38	42	50	50
39	39	39	43	51	51
41	42	44	44	52	52
43	43	45	45	53	53
45	46	46	46	54	54
47	47	47	47	55	55
49	50	52	56	56	56
51	51	51	57	57	57
53	54	54	58	58	58
55	55	55	59	59	59
57	58	60	60	60	60
59	59	61	61	61	61
61	62	62	62	62	62
63	63	63	63	63	63

her age is found. She answers, in the 1st, 2nd, and 6th. The numbers at the top, 1, 2, and 32 added, make 35.

Alphabet in one Verse.—The following contains all the letters of the alphabet, and may be used as an exercise for children in tracing their letters:

"God gives the grazing ox his meat,
And quickly hears the sheep's low cry;
But man, who tastes his finest wheat,
Should joy to lift his praises high."

No. 202. *The Silver Puzzle.*—Though not new, this will afford much amusement to those who have never seen it. Lay a ten-cent piece upon the table-cloth between two half dollars, and place a tumbler upon the larger coins, so as to cover the smaller one. The puzzle is to remove the ten-cent piece without displacing either of the half-dollars, or the glass. You are not allowed to touch the coin with the hands or anything else, nor must you blow it away.—How is it done?

No. 203. *Bible Questions.*—1. How long was the ark on Mt. Ararat? 2. Joah was the son of Zeruiah, what relation was Zeruiah to Joah.

No. 204. *Mathematical Problem.* contributed to the *American Agriculturist* by James Dickson, Olmstead Co., Minn.—Give the rule for the following: Any dividend being given, to find a divisor, which added to its quotient shall equal the dividend.



No. 205. *Illustrated Rebus.*—An acknowledged truth.

Answers to Problems and Puzzles.

The following are answers to the puzzles, etc., in the March number, p. 107. No. 196. *Charades.*—1st. "Our Mutual Friend."—2d. "The Round Table."—3d. "St. Valentine's Day."...No. 197. *Word Puzzle.*—Wheat....No. 198. *Illustrated Rebus.*—Cincinnati...No. 199. *Picture Puzzle.*—Both are pictures of the "grub" which makes the butterfly....No. 200. *Illustrated Rebus.*—Be not weary in well doing....No. 201. *Conundrum.*—The page is dun (done). ...No. 188. *Arithmetical Problem.*—(Feb. No., page 67.)—A's share, 2863; B's, 6335; C's, 2438; D's, 10294; E's, 4950.

The following have sent in correct answers up to the date of March 8th. To save space, the numbers of the problems answered, are omitted: C. J. Lorah, J. S. Dobbins, James D. McGiffert, F. M. Whitney, Cross Cut, Pa., H. H. L., John K. Hallock, Henry J. Blodgett, Morris P. Wright, M. M. C., Edwin C. Woodruff, Henri W. Young, John N. Chadsey, D. Herbert Jeffery, Samuel J.

Bassford, John F. Holmes, L. V. N. P., L. M. Marston, G. Clarence Cooper, Mary E. Storm, Georgia A. Smith, Etta Smith, Annis A. Sargentorpha, (a class in school, from 11 to 12 years old, answered the "Scramble" problem.) Wm. F. Sherman, D. Paul, G. T. Reeves, Mrs. Emma J. Hunting, Peter W. Teghtmeyer, Edward R. Browne, Wm. C. Johnson, T. G. Lawrence, George H. Gilbert, E. A. Williams, J. S. Stiles, Fidelia E. Quin, John Slater, Kiah, Chester H. Dakin, John F. Holmes, Jas. P. McCurdy, Anthony B. Strother, C. C. Hyndman, Luman F. Parmenter, Hattie R. Quinn, John Dobell, S. P. Stewart, J. M. Jordan, Mary Agney, Zenas Condit, Joseph Taylor, James E. Eshleman, W. E. Alexander, C. Van Warner, Nelson G. Hull, D. W. Williamson, John A. Driggs, Aaron Oscar Ream, A. G. Tillinghast.

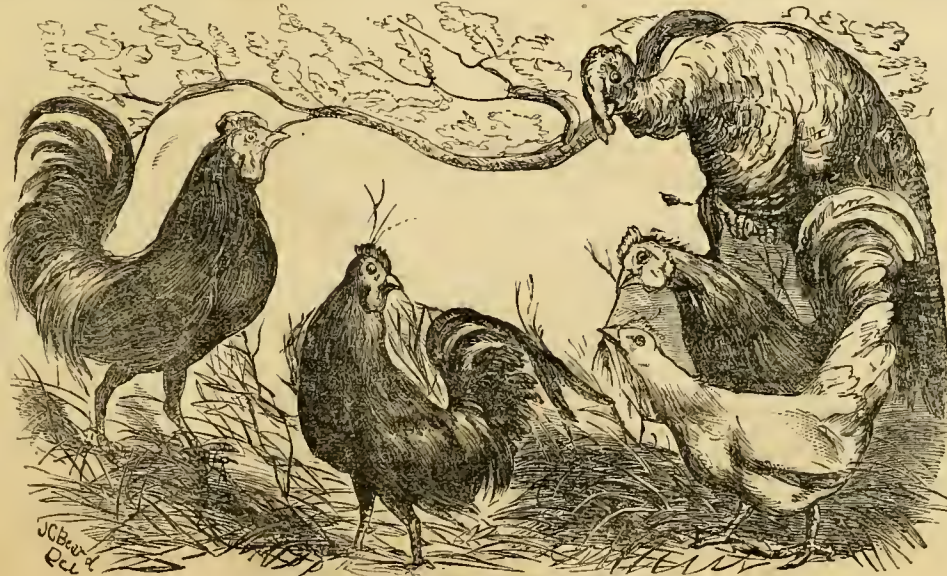


Fig. 2.—AN ENEMY IN THE CAMP.—WHERE IS HE?



THE YOUNG RUNAWAY. — Engraved for the American Agriculturist.

Oho, Master Lillypet ! a fine time you are having ; while mother and sister are running up stairs and down, and out into the garden, looking behind the currant bushes, beside the hay-stack, among the rubbish in the wagon-house, where they once found you asleep, searching in every nook and corner, even looking fearfully down the well, to see what can have become of their dear troublesome little pet—"lillypet," as he names himself, for he can not talk plain yet. How they will punish him with kisses when they find the "little mischief" sailing his shoe in the brook, thinking of the stories he has heard his father tell about ships on the ocean, and, as you can see by his face, half afraid there is something wrong in it, but sure he is having "such a nice time." Every one of our girls and boys will feel like saying, be gentle with him. His clear blue eye has no malice in it, and what a beautiful picture he makes, looking like a charming flower, over which even the stern old trees seem to bend lovingly. Such little ones are favorites not only on earth : He who coming from Heaven once lived among men, and now has returned to his home among the angels, loved children, and said "their angels do always behold the face of my Father," and He and they will love such as gently care for the lambs of His flock.

Happy will it be for every child who early learns to fully trust One who is always so loving and true.

Landed at the Wrong Place.

What boys desire to be, and to have, when they become men, can not be possessed by *wishing* ; it must be *worked* for. A young man, lately from the country, passes our office almost every day. He is hoping to become a rich merchant. He is now only an entry clerk in a large store. If he will work hard enough for it, by taking care of his spending money and his spare time, he may do as hundreds have already done, become a wealthy business man. But his spare change is divided among tailors, hatters, confectioners, theatre-managers, cigar makers, and others who please his fancies and his senses. Many of his leisure moments are given to story books and papers, instead of reading that which would inform him about his business. If he keeps on this way he will not be the man he expects to become. Ten years hence will find him, perhaps a poor dandy, perhaps a ruined sot, or at best only a poor clerk. Another lad we know, goes on errands as though his boots were filled with lead. He stops to look at every showy window, and takes a scolding on his return as something which he expected. At such a rate, he will always be a poorly paid drudge.... The captain of a ship sailing for England, a few days after starting, found two men stowed away among the cargo. They had hid there to steal a passage across the Atlantic. The ship

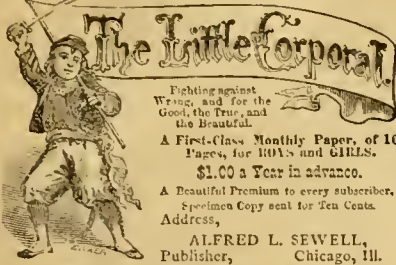
was too far away from land to send them ashore, and the best that could be done with them was to make them work their passage. As the vessel happened to be short of hands, the captain was not sorry to have this addition to his crew ; but although the men wanted to get over, the one to Ireland, where the vessel was to touch, and the other to England, they refused to work. They were punished by being put on short rations, by confinement, and various other methods, without avail. Finally, when the ship arrived at her destination they were landed where they did not want to go ; the Englishman on the Irish coast, and the Irishman at Liverpool. This punishment was light, compared with that which many a thoughtless youth will receive, who starts for successful manhood, but is not willing to *work his passage*. Jails and Almshouses are full of those who started fairly on their voyage, but have landed at the wrong place.

A Curious Plaything.—Cut out a circular piece of card board, say two inches in diameter. In the middle of it insert a quill, or small tube, so that the end shall be even with the upper surface of the card. Over this lay another circular card of nearly the same size, with a pin run through, to drop into the hole. Place the quill upright in the mouth and blow off the top piece—if you can.

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Twenty-First Annual Report OF THE NEW-YORK LIFE INSURANCE COMPANY.

OFFICE,

Nos. 112 and 114 BROADWAY.

JANUARY 1st, 1866.

Amount of Assets January 1st, 1865	\$3,658,755 55
Amount of premiums received dur- ing 1865	\$2,084,801 86
Amount of interest received and accrued, including premium on gold, etc.	257,260 54 — 2,342,830 40
Total	\$6,000,065 95

DISBURSEMENTS.

Paid losses by death	\$490,522 03
Paid for redemption of dividends, annuities, and surrendered and can- celled policies	294,698 53
Paid salaries, printing, and office expenses	71,528 95
Paid commissions and agency ex- penses	216,405 53
Paid for advertising and physician's fees	31,542 41
Paid taxes, internal revenue stamps, war contribution, and law ex- penses	14,208 80 — \$1,118,919 25
Total	\$4,881,919 07

ASSETS.

Cash on hand and in bank	\$250,036 56
Invested in United States Stocks, cost	2,115,431 35
Invested in New-York City Bank Stocks, cost	55,561 50
(Market value, \$51,415.)	
Invested in other stocks, cost	333,923 15
(Market value, \$31,015.)	
Loans on demand, secured by United States and other stocks	48,500 00
(Market value, \$55,888.)	
Real Estate	140,819 77
(Market value, \$350,000.)	
Bonds and mortgages	230,747 02
Premium notes on existing policies bearing interest	1,186,983 21
Quarterly and semi-annual premi- ums, due subsequent to January 1st, 1866	242,451 02
Interest accrued to January 1st, 1866	60,980 59
Rents accrued to January 1st, 1866	1,879 12
Premiums on policies in hands of agents and in course of trans- mission	197,601 54 — \$4,881,919 70

The trustees have declared a return premium as follows:
A Scrip Dividend of FIFTY PER CENT. upon all participat-
ing premiums on Life Policies in force, which were issued
twelve months prior to January 1st, 1866, and directed the
redemption in full of the dividends declared in 1863 and 1864.Certificates will be redeemed in cash on and after the first
Monday in March next, on presentation at the home office.
Policies subject to notes will be credited with the return on
settlement of the next premium.

By order of the Board,

WILLIAM H. BEERS, Actuary.

During the year 5,183 new policies were issued, insuring
\$16,324,883.BALANCE SHEET OF THE COMPANY, JANUARY 1st,
1866.

Assets as above, at cost	\$4,881,919 70
Market value	\$5,018,449 06
Disposed of as follows	
Reserved for losses, due subsequent to Jan. 1st, 1866	\$78,841 45
Reserved for reported losses, await- ing proofs	26,000 00
Reserved for special deposit for minor children	285 76
Amount reserved for re-insurance on all existing policies (valuation at 4 per cent. interest)	3,530,297 66
Reserved for:	
Dividends declared prior to 1863, due and payable on demand	118,211 88
Dividends, 1863 and 1864, now to be paid	232,895 00
Dividend, 1865 (present value)	315,042 00
Dividends, 1866 (present value)	506,117 00
Special reserve (not divided)	134,229 95 — \$4,881,919 70

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Published by TOMLINSON BROTHERS, Chicago, Ill. 377 pages, 16mo. Five illustrations. Price \$1.50. It is one of the most popular Juveniles of the season, nearly three thousand having been sold the first month of publication. The press throughout the country pronounced it one of the best books for young people that has been published for a long time. Sent post-paid, on receipt of price.

Colgate's Aromatic Vegetable Soap.

A superior Toilet Soap, prepared from refined Vegetable Oils in combination with Glycerine, and especially designed for the use of Ladies and for the Nursery. Its perfume is exquisite, and its washing properties unrivalled. For sale by all Druggists.



For Merchants, Druggists, Hospitals, small Job Printers, &c. Address ADAMS PRESS CO., 36 Ann-st., New York. Specimen Sheets of Type, Cuts, &c., Six cents.

India Rubber Gloves

are an invaluable protection for the hands in Gardening, Housework, etc., and a certain cure for Chapped Hands, Salt Rheum, etc. Sent by mail on receipt of \$1.50 for Ladies' sizes; \$1.75 for Gentlemen's, by

GOODYEAR I. R. GLOVE MFG CO.,
205 Broadway, New-York.

**MATTICE & PENFIELD'S
TILE MACHINE.**

This Machine has been before the Public seven years, and has been subject to the severest tests, both by use in various portions of Ohio, Indiana, and Michigan, and at the Fairs of the States, coming in competition with the best Machines ever introduced in the United States, and in every instance where properly tested, has proved itself to be the most **Practical, Durable, Labor-Saving Tile Machine,** ever yet introduced.

This Machine grinds the Clay, molds and places the Tiles on the drying boards.

It is so constructed, also, that a screen can be used to catch stones, roots, &c., when desired.

It is capacitated for three revolutions per minute, Two-Horse Power, and two men to tend, one to feed the Clay, and one to set the Tile away.

When run to its full capacity, it is capable of making from ten to twelve thousand Tile per day.

For further particulars, Address J. W. PENFIELD,
Willoughby, Lake Co., Ohio.

Mead's Conical Plow.

Endorsed by hundreds of practical farmers as the **BEST NEW PLOW** in the market; and having received from numerous New England Fairs, Plowing Matches and Exhibitions, **FIRST PREMIUM AWARDS and DIPLOMAS,** it is confidently commended to all farmers who desire the **BEST PLOW.** Plows or particulars may be had from the following manufacturers, for Eastern, North Eastern, and South Eastern New England: Wm. E. Barrett & Co., Providence, R. I. For Western, Central, and North Western New England: Decher & Taylor, Agricultural Tool Co., Chicopee Falls, Mass. For South Western New England, and elsewhere **SOLOMON MEAD, New Haven, Conn.**

RARE and BEAUTIFUL FLOWERS.

SELECT VEGETABLES,

B. K. BLISS,

**Importer and Grower of
GARDEN VEGETABLE & FLOWER SEEDS,
Springfield, Mass.,**

Would invite attention to his large and well selected assortment of the above, comprising the newest and most approved varieties, both of European and Home Productions, the quality of which can not be surpassed.

For a List of which, see his

**Illustrated Seed Catalogue
and Guide to the Flower and
Kitchen Garden.**

The ELEVENTH EDITION, with supplement for 1896, enlarged and improved, contains upwards of ONE HUNDRED PAGES of closely printed matter, with many NEW and BEAUTIFUL ILLUSTRATIONS, and a descriptive list of upwards of TWO THOUSAND VARIETIES of FLOWER and VEGETABLE SEEDS, including many CHARMING NOVELTIES, now offered for the first time in this country, with explicit directions for their culture. Also, a list of

**Upwards of One Hundred Varieties of French
Hybrid Gladiolus,**

embracing many new varieties not before offered, and other SUMMER FLOWERING BULBS. To which is added a list of a few of the choicest varieties of GRAPES, STRAWBERRIES, RASPBERRIES, and other SMALL FRUIT, BENOIX PLANTS, etc., etc., cultivated at his gardens, with much other useful information upon the subject of Gardening generally, which will be found useful to the experienced amateur as well as those about to commence the delightful occupation of Gardening.

A copy will be mailed, post paid, to all applicants enclosing Twenty-five Cents.

RELIABLE SEEDS.

Farmers and Gardeners in want of Seeds that can be depended upon, are requested to look at our advertisements in the March No. of the Agriculturist under the following headings.

Seeds for the Farm and the Garden.

Collections of Kitchen Garden Seeds.

Collections of Flower Seeds by Mail.

Seeds of Florists Flowers.

New Crop Onion Seed.

Potatoes for Seed.

All of which are offered to the public with the utmost confidence in their good quality.

B. K. BLISS, Springfield, Mass.

Bedding Plants, &c., by Mail.

Strong and healthy Plants of the following varieties will be securely packed and mailed post-paid, to any address in the United States, upon receipt of the price affixed.

12 Monthly Carnations, in different varieties.....	\$3.00
12 Hardy Carnations and Picotees, in different varieties.....	2.50
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12 Large Flowering Chrysanthemums, in different varieties.....	2.50
12 Double Feverfews, in different varieties.....	2.50
12 Fuchsias,	2.00
12 Scarlet Geraniums,	2.50
12 Heliotropes,	2.00
12 Lantanas,	2.00
12 Petunias,	2.00
12 Philoxes,	2.00
12 Pansies,	2.50
6 Salinas,	1.25
12 Dahlia (Pot roots),	2.50
12 Lilliput Dahlias, (Pot roots),	8.00
12 Verbenas,	1.50
25 Verbenas,	2.75
3 Tritoma Uvaria,	1.75
6 Pot Roses,	2.00
6 Hardy Perpetual,	2.50
12 Gladiolus, finest varieties, mixed.....	2.00
12 Double Italian Tuberoses,	2.00
3 Japan Lilies, Rubrum, Roseum, Album.....	1.50

The selection of varieties to be left with us. No orders will be filled for less than the amount specified, at the prices named.

E. K. BLISS, Springfield, Mass.

Our New Illustrated Plant Catalogue, containing a list of all the most desirable Plants in cultivation, with directions for culture, mailed to all applicants enclosing 10 cents.

Address B. K. BLISS, Springfield, Mass.

Connecticut Seed Leaf Tobacco Seed.

Be Sure and Get the Best.

A superior lot raised expressly for the subscriber by one of the most successful cultivators in the Valley of the Connecticut.—Packets with full directions for culture, curing, packing, &c., will be mailed, post paid, to all applicants at the following rates: 1 ounce, 50 cents; 4 ounces, \$1.50; ½ pound, \$2.50; 1 pound, \$4.00. Prices to dealers in larger quantities will be given upon application.

B. K. BLISS, Springfield, Mass.

**ANOTHER SPLENDID NOVELTY from
JAPAN.**

Striped Leaved Japanese Matze.

For a full description of this beautiful Plant, with an engraving, see the March No. of the Agriculturist. The subscriber is happy to announce that he has secured the entire stock of this splendid novelty, and now offers the seeds in packets containing Twenty Seeds at 25 cts. per packet, 5 packets for \$1. The Trade supplied upon the most liberal terms.

Address B. K. BLISS, Springfield, Mass.

Lilium Auratum.

New Golden Banded Lily.

A splendid novelty from Japan, thus described by Dr. Lindley, editor of the London Gardener's Chronicle:—"If ever a flower merited the name of glorious, it is this, which stands far above all other Lilies, whether we regard its size, its sweetness, or its exquisite arrangement of color. Imagine, upon the end of a purple stem no thicker than a ramrod, and not above two feet high, a saucer-shaped flower at least ten inches in diameter, composed of six spreading, sometimes crisp petals, rolled back at their points, and having an ivory-white skin thinly strewn with purple points or studs, and oval or roundish, prominent, purple stains. To this add in the middle of each of the six petals a broad stripe of light satiny yellow, losing itself gradually in the ivory skin. Place the flower in a situation where side-light is cut off, and no direct light can reach it except from above, when the stripes acquire the appearance of gentle streamlets of Australian gold, and the reader who has not seen it may form some feeble notion of what it is. From this delicious flower there arises the perfume of orange blossoms sufficient to fill a large room, but so delicate as to respect the weakest nerves."—Strong flowering. Bulbs, mailed post-paid, to any address upon receipt of \$5.00.

Address B. K. BLISS, Springfield, Mass.

New White Dicytra.

Dicytra (Dicentra) Spectabilis alba.

Another year's trial confirms what we have previously said of this charming novelty. Its delicate blossoms, graceful habit, and beautiful foliage, will cause it to become a general favorite, and no garden, however small, will be complete without it. It forms a pleasing contrast with the original variety, and as a decorative plant for the cemetery it stands unrivalled.

Strong and well rooted Pot Plants will be ready for delivery about the first of April, and will be mailed post-paid to any address in the Union upon receipt of the price. One Plant, \$1; Six Plants, \$5; Twelve Plants, \$9. A few one year old ground roots for propagation, \$3 each.

Address B. K. BLISS, Springfield, Mass.

**The Best and most Hardy Hedge
Plant.**

HONEY LOCUST, OR THREE THORNED ACACIA.

Fresh Seed with directions for culture, will be mailed to any address, at the following prices: 1 oz., 15 cents; 4 ozs., 35 cents; 1 pound, \$1.00. Prices in larger quantities will be given upon application. B. K. BLISS, Springfield, Mass.

Goodrich's Early Potatoes.

Our stock of this variety is exhausted. We still have a supply of all the other varieties advertised by us, in March No. of the Agriculturist. B. K. BLISS, Springfield, Mass.

Chicory Seed.

The Great Substitute for Coffee.

A supply of the genuine article just received by the Subscriber, and will be mailed, post-paid, to all applicants upon receipt of price affixed. Packets containing 1 ounce, 20 cts.; 8 ounces, 80 cents; 1 pound, \$1.50. Directions for culture and curing accompany each package. Address

B. K. BLISS, Springfield, Mass.

NEW SEED.

Farmers! do you want New-England grown seed left at your doors as cheaply as it is sold in Boston, New-York, or Philadelphia? I have introduced my Hubbard Squash, Marblehead Mammoth Cabbage, and a score of other new vegetables to thousands of farmers, and am ready to send them to thousands more. Catalogue sent gratis to all who apply. It contains a list of nearly three hundred varieties of Garden Seed, (many of them new and rare, and not to be found in any other Catalogue,) a large portion of which are of my own growing. Never fear to order my seed, as I warrant all to reach the purchaser. Send early before the great rush comes. JAMES J. H. GREGORY, Marblehead, Mass.

Para, Turban, Hubbard, Yokohama!

As the original introducer of the Hubbard Squash, I am prepared to supply every cultivator with PURE seed. The Hubbard is the best, sweetest and richest of all winter squashes, and will keep till April. The Turban is the driest, sweetest and richest of all FALL squashes, and will keep till March. Many of my correspondents are extravagant in their praise of this squash—"Why will people longer raise the coarse, watery summer varieties when they can get such a squash as the Turban?" The Yokohama, a new squash from Japan, has given great satisfaction this season; it is exceedingly fine grained, very sweet, and of a peculiar marrow-like taste. The Para is a bush squash from South America, for fall and winter use; keeping till February. It resembles in quality a very fine crookneck. My seed stock came directly from Para and is PURE. All these varieties yield abundantly. Ten tons of Hubbard and eight tons of Turban have been raised to the acre.—Packages of seed of each of these varieties, sent post-paid to any address for 15 cts. Hubbard sent by the lb. for \$2.25. Turban sent by the lb. for \$3.50. JAMES J. H. GREGORY, Marblehead, Mass.

ONIONS IN HILLS.

I will send Machines for sowing Onion Seed in hills, two rows at a time, ready for transportation at \$10 each. When sown by these Machines a large crop of carrots is raised on the same ground between the hills of onions. They are extensively used by the great onion cultivators of Long Island. JAMES J. H. GREGORY, Marblehead, Mass.

FLOWER SEEDS BY MAIL.—The Subscriber raises about one hundred kinds of Flower Seeds, selected from over one thousand varieties, of the most showy and attractive. He will furnish, neatly put up, any 33 kinds on the list for \$1, and send by mail, with postage pre-paid, G. R. GARRETSON, Flushing, N. Y.

Philadelphia Raspberry.

Two strong plants, \$1; 12 plants, \$1; by mail. **Agriculturist Strawberry,** 12 strong plants, \$1.25; 100 plants, \$5. Also, **GRAPE VINES,** for sale by THOS. S. FLETCHER, Delaoco, Burlington Co., N. J.

STRAWBERRIES, Blackberries and Raspberries, all the best and newest varieties. Catalogues gratis. SAMUEL L. ALLEN, Chumamison P. O., N. J.

Open Page Advertisements, \$1.50 per line of space.

Fruit and Ornamental Trees for Spring of 1866.

ELLWANGER & BARRY, have the pleasure of offering for Spring planting, their usual large and well-grown stock of **Standard and Dwarf Fruit Trees.**

Ornamental Trees, Shrubs and Plants.

Green-House and Hot-House Plants.

Bedding Plants, including the splendid large leaved *Cannas*, *Wigandias*, *Aralias*, *Colocasias*, &c.

Each of these departments contain all of real value, old and new.

The following Catalogues, which give full particulars, will be sent pre-paid upon the receipt of postage stamps, as follows: Nos. 1 and 2, ten cents each, No. 3, five cents, No. 4, three cents.

No. 1.—A Descriptive and Illustrated Catalogue of Fruits.

No. 2.—A Descriptive and Illustrated Catalogue of Ornamental Trees, Shrubs, Roses, &c., &c., &c.

No. 3.—A Catalogue of Dahlias, Verbenas, Petunias, and select new Green-house and Bedding Plants, published every Spring.

No. 4.—A Wholesale Catalogue or Trade List, published every autumn.

**ELLWANGER & BARRY,
MOUNT HOPE NURSERIES,
ROCHESTER, N. Y.**

Flower Seeds--By Mail, Postage Paid.

The following are imported in *separate colors*, and mixed so that a package will give many plants of *each color*.

Aster, GIANT EMPEROR; double flowers of enormous size. Azure, peachblossom, violet, light indigo, carnation, pure white, purple, appleblossom, lilac, rose, pale copper color, coconut color, &c., &c.; in all, 23 colors \$1.00

Aster, DOUBLE HEDGECOCK; beautifully quilled, 6 colors. 50

Aster, DOUBLE IMBRICATE POMPONE; perfection, 10 colors. 75

Aster, DOUBLE CROWN; purple, crimson, violet, rose, brownish purple; each color lighted with white centre. 50

Aster, REID'S DOUBLE QUILLER, 10 colors. 50

Aster, DOUBLE DWARF PYRAMIDAL BOUTIQUE; profuse bloom, 12 colors. 50

Aster, TRUFFAUT'S PEONY FLOWERED; extra fine. Twelve colors. 75

The whole collection of Asters for \$1.00.

Balsams, CAMELIA FLOWERED; extra double, 8 colors. 50

Balsams, IMPROVED ROSE FLOWERED; large and extra double. Eight colors. 50

Balsams, PALE YELLOW; sweet scented, very fine. 25

The Collection of Balsams for \$1.00.

Cockscorns, DWARF; new and extra rich colors. A package contains Crimson, Golden Yellow, Purple, Rose, Yellow, Chamais, and Viridiflora (new). 50

Stocks, LARGE FLOWERED DWARF; Splendid trusses of flowers. Twelve delicate and brilliant colors. \$1.00

Stocks, WALLFLOWER LEAVED; Twelve best colors. 75

Stocks, BRANCHING GERMAN. Six colors. 50

The Collection of Stocks for \$2.00.

Zinnia, extra quality; mostly very double. Several colors. 50

Portulaca, NEW DOUBLE; white, orange, purple, white striped rose. 50

The grower warrants one half to be Double.

Phlox Drummondii, most brilliant. Crimson, pure white, intense scarlet, magenta, pink, lilac, and many others. 75

The above are the *very best* Seeds of a celebrated Grower in Europe. Last September, at the Inter-Continental Horticultural Exhibition, of Prussia, his Asters were awarded a large Silver Medal; his Stocks, two Silver Medals; and other Flowers received certificates of merit.

Gladiolus.—Over 150 Varieties of this surpassingly brilliant and beautiful Flower. Roots of six superb named varieties, distinct in color, or twelve not named, for \$2.00.

Any of the above will be mailed promptly and post-paid, on receipt of price. All are of most easy cultivation. Plain directions accompany each package. Address

GEORGE SUCH, South Amboy, N. J.

Superb Flowering Plants---By Mail.

On receipt of price, the following will be forwarded, postage paid, perfectly protected in moss, covered with oiled paper, or in boxes made for the purpose. Being on the line of the Camden and Amboy R. R., a package by the afternoon mail would reach a point 200 or 300 miles distant early next morning.

12 VERENAS, most brilliant varieties. \$1.50.

6 MONTHLY GERANIUMS, extra fine. 1.50.

Any of the following will be sent at \$2.25 a dozen.

SCARLET GERANIUMS.—CHRYSANTHEMUMS, very finest, large and small.—HELIOTROPE, 12 varieties.—FUCHSIAS, best single and double.—PETUNIAS, very showy.—SALVIAS, several kinds.—AGERATUM, the plain, and the variegated.—BALSAM, sweet scented; leaves variegated green and gold. Hardy.—LANTANAS, all the most brilliant.—FAXSIAS, beautifully marked.—VIOLETS, single and double.—LOBELIAS.—VERONICAS.

2 JAPAN LILIES. 2 DOUBLE TUBEROSES. } for \$2.25.

6 GLADIOLUS, superb varieties. }

Send your address distinctly to

GEORGE SUCH, South Amboy, N. J.

Po'keepsie Small-Fruit Nursery.

All persons desirous of purchasing the **Newest and Choicest** varieties of **Strawberries, &c.**, are particularly requested to send for Catalogue and Price List. The quality of our plants and style of packing cannot be surpassed, if equalled, as letters from our customers in all sections will amply show. Address

EDWIN MARSHALL, Po'keepsie, N. Y.

Strawberry Plants.

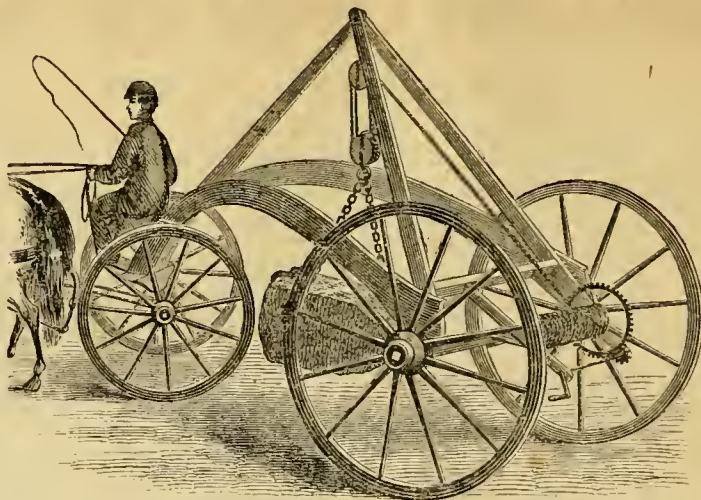
Agriculturist, (quality of plants fully equal to those I sent out last year, \$1 per dozen; \$5 per 100; \$40 per 1000.

Russell's Prolific, \$1 per 100; \$5 per 1000.

Smith's Buffalo Seedling (true), and **French's Seedling**, \$1 per 100; \$10 per 1000.

Wilson, and all the old leading varieties at low prices. Send for Catalogue. EDWIN MARSHALL, Po'keepsie, N. Y.

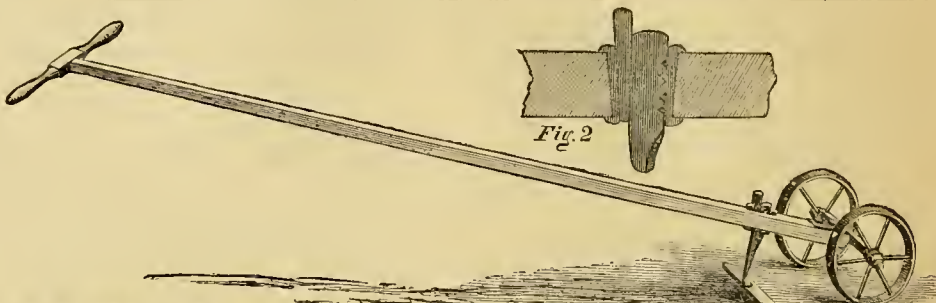
PACKER'S PATENT STUMP PULLER AND WALL BUILDER.



This Machine differs from all other machines for these purposes in its convenience for transporting Stumps, Stone, Cannon, Shafts, Castings, or any heavy weights. After having lifted them with its immense purchase, and strongly trussed frame. The combination of the arched reach with the truss, gives ample room for the load, while the wheels may be of common size. The load being on 4 wheels, is easy on the team; and the machine may be worked by either oxen or horses.

The superiority of this Machine as a wall builder, makes it deserving of especial notice. The stone after being lifted out of the ground can be drawn alongside the wall to the end, and the machine turned so as to bring the load directly across the wall, in which position the heaviest stone can be deposited with ease, either at the bottom or top of the wall, and the machine may then be turned back, leaving the stone in place. For particulars, Address

PACKER & FISIL, Mystic River, Conn.



CROFUT'S PREMIUM WEEDING HOE.

The most simple and complete Hoe for weeding Onions, Strawberries, and smaller crops, also, for various kinds of works. It is easily adjusted to any required high or angle, by means of a key, and is not liable to get out of order.

Manufactured by ARNOLD & CROSMAN, Westport, Conn., and for sale by A. C. ARNOLD, Norwalk, Conn., J. VANDERBILT, 23 Fulton-st., New York, and R. H. ALLEN & CO., 139 Water-st., New York.

MEAD'S PATENT CONICAL PLOW.

The Conical is undoubtedly the best Plow for all kinds of work, that has ever been offered to the Public, and we are now prepared to furnish them to Farmers and the Trade at same prices that much poorer ones are offered, and warrant them in every particular. Send for a Price List.

W. E. BARRETT & CO., Providence, R. I.

HORSE HOES.

We also manufacture Shares Patent Horse Hoes for the N. E. States. One season's trial will convince any Farmer that this is well worth the price of ten for working among Corn, Potatoes, and Root Crops. Send for Circular.

W. E. BARRETT & CO., Providence, R. I.

CLEMENT'S ARTIFICIAL LEG.

Harrisburg, Pa., January 24, 1865.

Richard Clement, Esq.:

Dear Sir:—Your limb sent me has been received, and fits perfectly. I am satisfied that it is a good job. Many here wearing other limbs, strongly intimate, seeing this one, getting substitutes from you. I am dancing about on my pins as brisk as ever. Grateful for the service you have rendered me, I remain,

Truly yours,

GEORGE W. ROBERTS.

CLEMENT'S NEW PATENT ARTIFICIAL LEGS accurately adjusted at his Branch Office, at Marsh & Co.'s Radical Cure Truss Offices, 2 Vesey-st., Astor House, New York, and S. N. Marsh, Corlies & Co., 3 West Fourth-st., Cincinnati, opposite the High Steeple.



TAXIDERMISTS' MANUAL,

GIVING full instruction in Skinning, Mounting and Preserving Birds, Animals, Reptiles, Fishes, Insects, Eggs, Skeletons, &c. Sent by mail, postpaid, on receipt of \$1.00.

Address S. H. SYLVESTER, TAXIDERMIST, Middleboro', Mass.

Stammering

Cured by Bates' Patent Appliances. For descriptive pamphlet, etc., Address SIMPSON & CO., 277 West 23d-st., N. Y.

STANDARD PHONOGRAPHY—THE BEST SHORTHAND—Send for Circular and Catalogue to A. J. GRAHAM, 544 Broadway, New York.

TO FARMERS AND OTHERS.

Agents wanted for the following Implements. Have been thoroughly tested and are warranted. We offer liberal inducements to active men.

COLUMBIAN MOWER AND REAPER

Has two Driving Wheels. Forward cut when mowing, and Rear cut with side delivery when reaping. Second to none as a Mower, superior to all as a Reaper, and has a perfect

SELF RAKE.

SMALLEY'S CORN PLOW & CULTIVATOR,

Five implements in one. A boy can manage it with ease. It is a perfect Furrow, Coverer, Hoer, Miller and Harrow. The best implement in use for covering Grain.

BRANCH BEAM HILLING PLOW.

No Farmer should be without one of these light and simple Double Mould Plows. Has movable Wings suitable for rows from 2½ to 3½ ft. apart. Send for Illustrated Pamphlets with Terms to Agents.

AMERICAN AGRICULTURAL WORKS,

17 Courtland-st., New-York.

DUANE H. NASH, General Agent.

Millstone Dressing Diamonds

Set in Patent Protector and Guide. For sale by JOHN DICKENSON, Patentee and Sole Manufacturer, and Importer of Diamonds for all Mechanical purposes. Also Manufacturer of Glaziers' Diamonds, No. 64 Nassau-st., New-York City. Old Diamonds reset. N. B.—Send postage-stamp for Descriptive Circular of the Diamond Dresser.

PREMIUM CHESTER WHITE PIGS for Sale.—Sent by Express to all parts of the United States. For Circulars and Prices, Address N. P. BOYER & CO., Gum Tree, Chester Co., Pa.

THE CHARTER OAK LIFE INSURANCE COMPANY, of HARTFORD, CONN.

Assets, January 1st, 1866.

Loans on Bond and Mortgage of Real Estate.....	\$237,127 73
U. S. Bonds.....	91,103 62
State Bonds ..	69,110 00
Cash in Bank and on hand.....	23,463 41
Bank Stocks.....	171,500 00
Town and City Bonds and Securities, approved by State Comptroller of Conn.....	227,850 00
Accrued Interest.....	23,559 56
Deferred Premiums.....	59,501 43
Premiums due from Agents, chiefly for month of Dec.....	122,630 80
Bills Receivable for Premiums.....	12,639 13
Loans on first-class Securities.....	34,172 39
Premium Notes on Policies in force.....	504,882 43
Personal property and U. S. Stamps....	7,506 10
	\$1,585,051 84

Officers.

JAMES C. WALKLEY.....	PRESIDENT.
NOYES S. PALMER.....	VICE PRESIDENT
SAMUEL H. WHITE.....	SECRETARY
S. J. BESTOR.....	ASS'T SECRETARY.
H. M. PALMER.....	SUPT. OF AGENCIES.
S. B. BERESFORD, M. D.,	CONSULTING PHYSICIAN.

THE CHARTER OAK CO., Guarantees Annual Dividends of 25 to 30 per cent.

NO OTHER COMPANY DOES THIS.

The Charter Oak Life Ins. Co.

Commenced business in October, 1850, and has been remarkably successful. It has issued over 19,000 policies, covering insurances to the amount of over \$49,000,000. It has paid losses to the families of about 500 of its policy-holders, and in the amount of \$1,000,000, and in no instance has a claim been litigated. The editor of "The Insurance Monitor and Wall-St Review," says in the January, 1866, issue of that Journal, in regard to the losses paid by this company:

"And all this has been done freely, without delay or the litigation of a single claim by the company. No orphan, no widow has thereby had her sensibility wounded afresh, or poignancy added to her sorrow by being compelled to dispute and wrangle for her rights.

"This conduct does honor to the heart and speaks volumes in favor of the liberal policy of the officers of the "Charter Oak." They could not have adopted a better or wiser course. What man is there who would not prefer to invest his savings in such a company as theirs, which, he is assured, will put his heirs to no needless trouble or expense, and scorn to avail itself of any quibble in order to evade the payment of the fruit of his hard earnings to those he may leave otherwise unprovided for, and desolate."

Extraordinary Security

Is offered by the Charter Oak Co., as its well-invested capital of \$200,000, is pledged to the insured, in case of unusual mortality or other causes, producing severe losses. The Stockholders and Directors thus have a great interest in the proper management of the company, while the insured have all the benefits of a solely mutual company, being entitled to all the profits of the "With Profits," (or Mutual) Department, while the Stockholders can only receive eight per cent. dividends on the capital stock.

The Annual Dividend Plan,

WHICH ORIGINATED WITH THE CHARTER OAK CO., IS THE GREAT POPULAR FEATURE of Life Insurance at the present time. By this plan the insured receives a Dividend at the second payment of premium, while in most Companies no dividends are paid until the FIFTH PREMIUM IS DUE. THE CHARTER OAK CO. has already paid two dividends upon the annual plan, viz: those of April 1st, 1864,



The following are the Agents for the principal cities not mentioned in the General Agents list:

J. T. POMPILLY, Agent for New York, office 151 Broadway.

ARTHUR MERRILL, Agent for Boston, office 27 State-st.

S. W. T. HOPPER, Agent for Baltimore, office 69 Second-st.

HILLIARD BROTHERS, Agents for Phila., office 419 Walnut-st.

THE CHARTER OAK LIFE INSURANCE CO.,

ORIGINATED THE SYSTEM OF ANNUAL DIVIDENDS to the insured, and has already paid two dividends upon that plan.

No other Life Insurance Company has yet PAID LIFE DIVIDENDS. But it is the only just course to the assured.

and 1865. In connection with this system, this Company has combined the Tri-ennial dividend plan, by which every three years the accumulated surplus is distributed to the insured. At the time of the declaration of the triennial dividend, a much larger distribution of surplus is made, than could be prudently made annually. Those who insure at any time before the 31st of March, 1867, will participate in the Tri-ennial Dividend of April 1st, 1867!

Insure This Year,

and at the second payment of premium, you will receive the largest Dividend ever yet paid by any Life Insurance Co., to those insured for a single year. The success of The Charter Oak Co., and its excellent condition, warrant this statement. Other companies have promised to pay annual dividends, and doubtless will ere long, but THE CHARTER OAK IS THE ONLY COMPANY WHICH HAS PAID SUCH DIVIDENDS.

The State Reports,

which are made annually to the Insurance Commissioners of New York and Massachusetts, show that in all the features, which constitute a safe, and every way excellent Life Insurance Co., THE CHARTER OAK stands in the first rank, and the public are most cheerfully referred to those standard reports, for proof of the assertions herein made.

The Tables of Rates,

adopted by this Company, are upon the several plans now in use, and are as low as is consistent with prudent management. Among the tables are the following. FOR POLICIES PAYABLE AT DEATH. Premiums payable annually during life. Premiums payable annually for ten years, (no payments required after ten years.) FOR POLICIES PAYABLE ON ARRIVING AT A CERTAIN AGE, OR SOONER IN CASE OF DEATH BEFORE THAT AGE IS ATTAINED. Premiums payable annually, during the continuance of the Policy. Premiums payable annually for ten years. These are the chief tables, but others are given in the books of the Company.

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time, or at the death of the person insured by it.

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which leave some surplus, but not enough to use in profitable investments, Life Insurance affords a most valuable aid. A man thirty-two years of age, who can lay aside but a little over fifty dollars a year, can make sure of \$4,000 as a legacy to his family, or of about the same amount for his own use on arriving at the age of sixty-five years. A Life Insurance Co., which will not require more than fifty dollars cash for premium of such policies as above named, will make investments of the same for the insured, and ensure him good returns.

Life Insurance is Valuable to All.

Large numbers of the "merchant princes" of our large cities have effected insurances of considerable amounts for their families, for they are well aware that their wealth, which depends so much upon their own continuance in life and health, and upon absence of financial panics, is not unlikely to be swept away in time of pestilence, or crises like those of 1837 or 1857. In such cases the avails of Life Insurance Policies would become the entire dependence of families unused to labor. Tens of thousands of all classes among the sober and prudent have become Policy holders in the Life Insurance companies, whose annual receipts and gross assets, rival those of the Fire Insurance companies of the country. The time is rapidly approaching when neglect to insure one's life, will be deemed ample proof of the lack of ordinary prudence.

Information,

concerning this company, its plans, rates, etc., may be obtained by addressing any of the agents named in the above lists. The general agents of the Company will also receive applications for local or traveling agencies in their respective localities. Men of good address and character are wanted for such positions in all the States named in the General Agent's list, and such will find The Charter Oak Co. a most desirable one for which to work.

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The property of the Company is situated at Reno, upon the right bank of the Alleghany river, in Venango County, Penn., in the centre of the oil district in that State. It embraces **Twelve Hundred Acres of Land, and includes the site of the town of Reno,** together with all the buildings and improvements thereon; all the wells upon the property producing and being sunk; all the structures, fixtures, engines, machinery, tools, and personal property of every description connected with the premises.

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The Revenue Commission, in its report to the Treasury Department, February, 1866, showed that there were 197 oil farms in Venango county. But four farms report every well producing, and of these four the largest number of wells is on the Reno property. There is room on the Reno estate for

ONE THOUSAND WELLS,

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One hundred wells, yielding only ten barrels a day each, at six dollars a barrel—a price much below the average price of oil at Reno—would give one million eight hundred thousand dollars a year of income, making a net profit of probably fifteen per cent. over all expenses and taxes of every kind. If large flowing wells should be found, A SINGLE ACRE OF THE TERRITORY MAY YIELD THE ENTIRE CAPITAL WITHIN TWO YEARS. The Company has contracted for putting down fifty wells, and the work is already commenced. It is the intention to sink **Three Hundred Wells,** as soon as practicable, or as many as may be necessary to fully develop the property.

The Company is subject to no rental. It is the absolute owner of the property, and receives the entire product of its wells.

Another Mode of Selling the Stock.

By the payment of ten dollars, any person may have a share of stock put aside for him until April 1st, 1867. At any time before that day, he may procure a full-paid share of guaranteed stock, by the payment of an additional sum of one hundred dollars. This "option," or right, enables the purchaser to await further developments of the Company before investing the amount required to purchase full-paid shares. He may have his money otherwise invested, or so placed that he can not readily realize, and a year's time will give him the opportunity. The options may rise in value, and become as marketable as any other stock. The option aids in the development of the property of the Company, as one half of the price is placed in the Working Fund. The purchasers of these options will be enabled to use their means for an entire year, and yet retain the right to take the stock by paying par for it, even though within the time it may be worth two hundred dollars per share.

The dividends of the Company are to be made semi-annually, in the months of May and November of each year. The first dividend day will be the third Wednesday of November next. If the property is rapidly earning money, the holders of options can, if they desire, before that date, pay for the stock and secure the first dividend, or they can wait the result of the development until the first day of April following, before deciding to take the stock.

In addition to the oil lands, the company owns the

Thriving Town of Reno,

with its lots, leases, water fronts, etc. They are now being sold and leased for business purposes and dwellings. The entire property belongs to the stockholders. They will receive the large revenue to be derived from the sale.

The sale of intoxicating liquors is prohibited in all contracts for lots sold by the Company. Oil refining and oil mining are not permitted within the built-up district. The natural scenery is pleasant and unsurpassed. There are springs of fresh water in the hills beyond the town, abundant for all the domestic purposes of the people. Streets are graded, and sidewalks will be built. Sites have been set apart for churches, public schools, municipal buildings, and parks. A liberal endowment has already been made for a public school of high character.

The water front is so much in demand, that portions of it have already been sold at the rate of more than a half million dollars for the whole. The landing is the best on the Upper Alleghany. The town is the terminus of the Reno Oil Creek and Pithole Railway. It is one of the principal stations on the Atlantic and Great Western Railway, and in a year will be the intersecting point of several other roads now being built. A large and increasing business now centres at Reno, and it must become the METROPOLIS OF PETROLEUM, as Chicago has become the metropolis of grain, Reading of coal, New Orleans of sugar and cotton, and San Francisco of gold.

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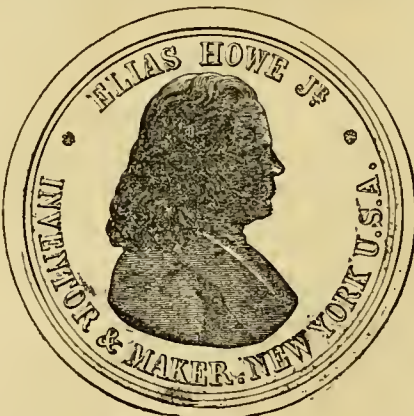
QUIETNESS OF MOTION,

RANGE OF WORK.

Its attachments for Hemming, Braiding, Binding, Cording, Quilting, and for Sewing on Trimmings of any width, are unrivaled for simplicity of adjustment and perfection of work. Liberal discounts to Shippers.

A. H. SUPLEE, 531 Broadway, New York.

THE "HOWE" SEWING MACHINE



For Families and Manufacturers.

For some years I have been actively engaged in increasing the facilities for manufacturing my Sewing Machine, and have succeeded in organizing a most complete system, combining perfection of workmanship with the largest production at the smallest cost.

In order to obtain these results, time, labor, money, and the experience of my life as a practical mechanic have been freely contributed, and I believe, with success. Further to facilitate manufacture and sale of my machine, "The Howe Machine Co." has been organized, and the business will be carried on in the name of that Company under my supervision. I shall endeavor to sustain and do nothing to imperil the reputation already achieved. The enviable reputation of my machine has induced persons to use my name in connection with machines of an inferior description, and I have, therefore, to protect myself and the public, adopted as an especial Trade Mark a medallion, having in the centre the profile of the inventor surrounded by the legend "ELIAS HOWE, JR. INVENTOR & MAKER NEW YORK U. S. A." This medallion is embedded in each machine, and none are the productions of myself or the "Howe Machine Co.," unless they bear this distinguishing trade mark.

ELIAS HOWE, JR.

The HOWE SEWING MACHINES are celebrated for doing the best work, using a much smaller needle for the same thread than any other machine, and by the introduction of the most approved machinery, we have so increased the production of machines and perfected the parts, that we are now able to meet all demands, and supply the very best machines in the world. These machines are made at our new and spacious Factory at Bridgeport, Conn., under the immediate supervision of the President of the Company, ELIAS HOWE, JR., the original inventor of the Sewing Machine.

THE HOWE MACHINE CO.,

629 Broadway, New York.

Lane's Purchasing Agency,

151 Nassau-st., New York.

Iona and Israel Vines, \$18 per dozen. The choicest Stock of Seeds, Vines and Plants constantly on hand. Orders carefully packed and sent by mail or Express.

IMPORTANT TO AGENTS.

AGENTS WANTED in every town throughout the land, to sell my new and popular MAPS and CHARTS. This is a rare chance for all out of employment to procure a pleasant and profitable occupation. I have the best assortment of Maps and Charts for traveling agents published in the United States. My Agents are making from five dollars to twenty dollars per day selling my Lincoln, Johnson, and Our Patriots' Charts. Send for a Catalogue giving full particulars. Address

GAYLORD WATSON,

Successor to PHELPS & WATSON, 16 Beekman-st., N. Y.



DOTY'S

CLOTHES WASHER,

THE MOST POPULAR, BEST, AND

Cheapest Washing Machine

EVER INVENTED.

It is easy to operate, sitting or standing; takes but little room; injures no garments; finishes its work in from two to four minutes; is durable, convenient, and the only Washing Machine ever known that is **LIKED THE BETTER, THE LONGER IT IS USED.**

Recommended as the **Very Best** by Solon Robinson, Orange Judd, Prof. Youmans, and many other prominent men.

At the Great Fair of the American Institute, Oct., 1865, where all the principal Washers in the country were ably represented, it was awarded the **FIRST PREMIUM.**

On receipt of \$20 from places where no one is selling, we will send the Washer and the famous **Universal Clothes Wringer**, (and pay the freight if within 200 miles of New York.) The Washer alone will be sent for \$12. Wholesale Terms Circular sent free. Exclusive right of sale given to the first responsible applicant from each town.

R. C. BROWNING, General Agent,
32 Courtlandt-st., N. Y.
(Opposite Merchants Hotel.)

The Universal Clothes Wringer WITH COG WHEELS



Has again taken the first premium at the great Fair of the American Institute; also at the State Fairs of New York, Vermont, Pennsylvania, New Jersey, Ohio, Indiana, Kentucky, Michigan, Illinois, and Iowa.

Over two hundred thousand have been sold, and every purchaser will testify that they save their cost in clothing every year, besides saving half the labor of wringing.

Send for Wholesale and Retail Terms Circular.

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32 Courtlandt-st., (opposite Merchants Hotel), N. Y.

CHALLENGE WASHING MACHINE.

Warranted to Wash
EASIER, QUICKER AND BETTER,
and WITH LESS WEAR to the clothes than any other machine or process.

WARRANTED to wash
SIX SHIRTS IN SEVEN MINUTES,
FOUR SHEETS IN FOUR MINUTES,
and other clothes in proportion.

Weights but 30 lbs. Costs but \$7 to \$9.
Sample machines sent on receipt of price, and money re-fused if they fail to give

ENTIRE SATISFACTION.
Six Machines sent to one address for the price of five.

Challenge Wringer and Mangle,

OR
IRONING MACHINE IN ONE.

A PERFECT WRINGER.—Self-adjusting—Malleable iron frame—White Rolls, and a

Perfect Ironing Machine

for Ironing WITHOUT HEAT, and as quickly as the articles would be run through a Wringer.

AGENTS WANTED everywhere.

Send enclosing Stamp for Circular, giving 1000 references and full description.

S. W. PALMER & CO., Auburn, N. Y.

No. 1.

WOODRUFF'S

No. 2.

Improved Portable BAROMETER!

Every intelligent farmer knows the value of a good Barometer, particularly in laying and harvesting, when its indications of a coming storm will often enable him to save valuable crops from damage and waste, and repay many times its cost. There is hardly a business or occupation in which a Barometer will not prove useful and profitable. Since, by the invention of the WOODRUFF Instrument, they are made safely portable, so that a very beautiful and nicely finished Barometer, correct in principle, and perfect in construction can be readily obtained by all at a very small cost; their use is becoming Universal.

"It is the best Barometer for general use."

American Agriculturist.
"It is really a good, practical portable Barometer."

Scientific American.
"The best Barometer, and very cheap."

Mother's Journal.
AGENTS WANTED EVERYWHERE.

Send Stamp for Circulars.
All kinds, sizes and styles of THERMOMETERS of Superior Quality and Finish, constantly on hand or made to order.

Address

CHARLES WILDER,
Peterboro,
New Hampshire.



Important to Bee Keepers.

Will be issued in May next the first number of a monthly Journal devoted to the interests of

The Bee Keeper.

No Intelligent Apiarian can afford to be without

The American Bee Journal.

This monthly will afford a medium through which Bee Keepers can compare experiences in their fascinating pursuit. Will present them monthly the cream of all foreign Bee Journals, and will be devoted to the advance of Bee culture throughout the United States. The want of such a Journal has long been felt by the American Apiarian, while this particular branch of rural industry has not always occupied in the agricultural journals that prominent place its importance demands. The American Bee Journal will have as regular contributors, and correspondents, some of the most intelligent, practical and successful Bee keepers in America. Messrs. Quinby and Langstroth, already eminent throughout the country as authors and successful Bee keepers, will contribute occasionally to its columns. The Journal will be issued in an attractive form and convenient for preservation. Correspondence on the subject of Bee culture solicited from every quarter. Terms of American Bee Journal, invariably in advance: 1 copy, one year, \$1; 10 copies, one year, to one address, \$9; 20 copies, one year, to one address, \$16. Address E. VAN SLYKE, Editor and Proprietor, Office American Bee Journal, 180 Broadway, New York.

ITALIAN QUEENS DURING THE SEASON.

SWARMS in the summer, and full colonies in the fall.

Send for Circular.

M. QUINBY, St. Johnsville, N. Y.

"Hints to Bee-Keepers."

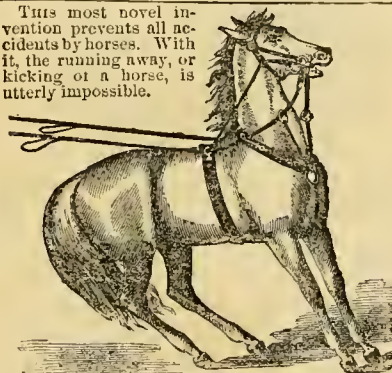
SENT FREE of charge to any address. A Pamphlet of plain, practical directions for the profitable management of bees. American Movable Comb Bee-Hive. Italian Bees and Terms to Agents. A small work on a great subject. Bee-Keeping in a nutshell.—Boston Cultivator. It exposes "bee humbugs" and explains pretended "secrets" which have mystified the people not a little.—Illinois Farmer.

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THOROUGHbred AYRSHIRE BULL AND
Cow for sale by ALFRED M. TREDWELL, Madison, Morris Co., New Jersey.

WANTED—AN ALDERNEY BULL CALF.
THOROUGHbred, 2 or 3 months old. Those having to sell please address, with stamp, JOHN BENNETT, Sumner, Ripley Co., Ind.

This most novel invention prevents all accidents by horses. With it, the running away, or kicking of a horse, is utterly impossible.



The Safety Bridle and Lines

prevent all accidents by Horses, cost no more than old style, and pay larger profit than any other business to sell. Rights. Read description and illustration on page 83, March Agriculturist. For particulars, all who read this, send for Circular.

S. B. HARTMAN, M. D., Millersville, Lancaster Co., Pa.

PLATA DUCKS

Eggs for Sale. \$5 per dozen.

Address A. M. HALSTED, 68 Pearl-st., New York.

Brahma Poetra Fowls.

Eggs of this superior breed of fowls, securely packed, will besent per express to any address on receipt of one Dollar per dozen. These fowls are but the second step from those imported, consequently PURE. Live weight from 18 to 25 lb when mature.

ALEX. HAXIN,
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Fancy Fowls.

FOR SALE—Dorkings, Polands, Hamburgs, Game, Brahmas, Leghorns, Spanish, Sebrights and other Bantams, China and Toulouse Geese, Rouen and other Ducks, Fancy Pigeons, &c., &c. Also their eggs for setting, fresh, and nicely packed. From \$2 to \$4 per dozen. For Circular, address with stamp, R. H. HAINES, Box 55, Elizabeth, N. J.

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Consisting of Black Spanish, Grey Dorkings, Silver Laced Seabright Bantams, Brahmas, Pouteras, Hamburgs, Games, Bolton Greys, and Polands. Send stamp for Circular to E. N. BISSELL, Richville, Vermont.

EGGS OF THE FOLLOWING FOWLS FOR
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FANCY FOWLS.—A FEW PAIRS OF BRAH-
MAS, Poland, Hamburg, Spanish, Leghorn, and other fowls. Also Eggs for setting from new importations. BENJAMIN HAINES, Jr., Elizabeth, N. J.

LEGHORN FOWLS.—FINEST IN THE COUN-
try. Pure white with yellow legs. Eggs constantly on hand. Price \$1.50 per setting of 13. Address E. F. VAN DYKE, Corner Yates and Myrtle Aves., Brooklyn, N. Y.

EGGS FOR SETTING FROM PURE WHITE-
faced Black Spanish Fowls, at two Dollars per doz. Address N. A. SHUTE, Exeter, N. H.



PATENT "SNAP & CATCH-EM" FISH
Hook.—A perfect trap, springs open in the fish's mouth. Sports and Boys all want them. More Agents wanted. Send 30 cents and stamp for two sample Hooks. Terms and Trade Prices to JOSEPH H. BIGGS, 335 Broadway, N. Y., also General Agent for the new

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Just what every farmer needs to restrain horses, mules and cattle, when turned out to pasture. Price \$2.00 each, \$18.00 per dozen. Orders promptly filled. Send stamp for Circular.

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For holding Sheep while tagging or trimming and doctoring feet. The Chair is cheap, simple, and efficient. Fits any sized Sheep. No fastenings used. All the labor is performed standing erect. The sheep is placed in and out of the Chair without being lifted bodily up. The Chair is endorsed by the best Wool-growers in the country. Territory for Sale. Full particulars free. From N. Y. and Vt. address S. A. J. CLARK, Bedford, Cuyahoga Co., Ohio. Elsewhere, GEO. E. BLAKELEE, Huntington, Lorain Co., Ohio.

Lalors' Sheep & Lamb



Dipping Composition,

Cures SCAB, TICKS and LICE on SHEEP or CATTLE, adds over a pound of wool to the fleece, improves its quality, and adds to the general health of the sheep, without danger from taking cold.

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Agents wanted for every State.

Also for sale, wholesale and retail by

GRIFFING BROTHER & CO.,

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Miller's Infallible Tick Destroyer,

For Sheep, is a certain cure for Tick, and all skin affections in Sheep. No Fleck-master should be without it. Sold in Tins at 50 cents; \$1.00; and \$1.50. The small sized Tin is sufficient for nearly 30 Sheep. Prepared only by

HUGH MILLER & CO., Chemists, &c.,
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TICKS, SCAB, VERMIN.

Sheep Wash Tobacco

Should be used by all Farmers on

SHEEP, ANIMALS & PLANTS.

If Farmers and others cannot obtain this article of traders in their vicinity, it will be forwarded free of express charge by

JAS. F. LEVIN,

Agt. South Down Co.,
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FOOT ROT IN SHEEP, FOUL IN CATTLE

And Thrush in Horses can be thoroughly cured by using WHITEMORE'S Cure. For Sale by all Druggists.

DUDLEY & STOFFORD, Agents, New-York.

American Hog Tamer.



A simple instrument for cutting a hog's nose to prevent rooting. Is in use by thousands of Western farmers, and highly approved.

Price \$3.00, with three Knives, delivered at the nearest Express office to the purchaser, East of the Rocky Mountains.

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Drake's Evaporator.

Those interested in the Manufacture of Sorghum Syrup will find it to their interest to examine the Drake Evaporator, as it exceeds all others in all the principles needful for successful syrup making. For Circulars with full information, Address JAMES CLOUD, Cochranville, Chester Co., Pa.

IMPROVED HAND LAWN-MOWER.—A simple, substantial, cheap, and effective Machine. Also manufacturers of the

PREMIUM FARM GRIST-MILL,
and every variety of AGRICULTURAL IMPLEMENTS. Send for descriptive circular, and address

WM. L. BOYER & BRO., Philadelphia, Pa.

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Of best quality and lowest rates, for sale by

JOHN W. QUINCY,

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contemplate buying Steam Threshers, Portable Engines, or Horse Power Threshing Machines, will do well to send for our Descriptive Circular, which we furnish free to all. Address J. W. Yeo, Robinson Machine Works, Richmond, Ind.

BROWN'S BRONCHIAL TROCHES.
A NEGLECTED COUGH, COLD, AN IRRITATED OR SORE THROAT, if allowed to progress, results in serious Pulmonary, Bronchial, and Asthmatic Diseases, oftentimes incurable. Brown's Bronchial Troches reach directly the affected parts, and give almost immediate relief. For BRONCHITIS, ASTHMA, CATARRH, and CONSUMPTIVE COUGHS the Troches are useful. PUBLIC SPEAKERS and SINGERS should have the Troches to clear and strengthen the Voice. Those who overtax the voice, and are exposed to sudden changes, should use them. OBTAIN only the genuine, "Brown's Bronchial Troches," having proved their efficacy by a test of many years, are highly recommended and prescribed by Physicians, and have received testimonials from many eminent men.

"I have never changed my mind respecting them from the first, excepting to think yet better of that which I began thinking well of."

Rev. HENRY WARD BEECHER.

Sold by all Druggists and Dealers in Medicine in the United States and Foreign countries, at 35 cents per box.

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Is the best in use. It gives perfect ease, comfort, and security. Send stamp for pamphlet.

DR. GLOVER, No. 11 Ann-st., New-York.



Invalid's Traveling Chairs
for in or Out-Door use. Prices \$15 to \$35. Patent Cautering Horses, prices \$12 to \$25. Nursery Swing upholstered, complete with hooks, \$3.75. Child's Carriages, \$5 to \$30. Boys' strong wagons, iron axles and seats, \$4.50 to \$6. For sale by the Manufacturer, S. W. SMITH,
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The universal testimony of the multitudes using PYLE'S O. K. SOAP, confirms the great fact, that it surpasses all other Soaps in market—in point of economy. It speaks for itself—as does PYLE'S SALEBRATUS and CREAM TARTAR. SOLD BY GROCERS EVERYWHERE.

CHOICE GARDEN, FIELD AND FLOWER SEEDS,

Farm and Garden Implements,
Gnano, Bone Dust, and Fertilizers of every variety, Plants, Trees and Shrubs.

For Price List, &c., See February Agriculturist, page 72.
JOHN VANDERBILT, 23 Fulton-st., New York.

Italian Queen Bees.

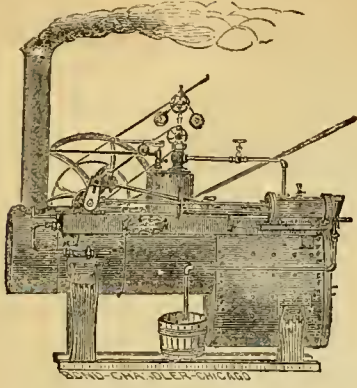
The Subscriber offers Queens of this valuable Bee, Warranted Pure. There are no black bees kept within several miles of my Apiary, making it almost impossible for any hybridization.

Also Proprietor of the

Langstroth Patent Bee-Hive

for the State of Iowa. Will furnish Hives, Individual, Township, or County Rights. For Circulars, Pamphlets, and Price List, Address (enclosing stamp.)

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Continue to manufacture their Improved

PORTABLE ENGINES,

For Farm and Mechanical purposes. They are particularly adapted to driving Threshing Machines, Circular Saws, Mills of all kinds, Printing Presses, Wood or Iron Lathes, Machinery in Cabinet or Wagon Shops, Boring Artesian Wells, Pumping Water, Corn Shellers, &c., &c.

We warrant our Engines to be what we represent them, and to give unqualified satisfaction in all respects.

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Buy the Best!



The practical working of this Machine, in the hands of many Thousand farmers, has fully established

ITS GREAT SUPERIORITY

over all others in Durability, Strength, Simplicity, Lightness of Draft, Convenience, Universal Efficiency, and

Every Desirable Feature of a Perfect MOWER and REAPER.

The Buckeye for 1866 is the Best Harvester ever offered to the Farmer.

Order early if you would make sure of securing the Best!

Circulars with Prices, furnished on application, by "Mail or otherwise."

ADRIANCE, PLATT & CO.,
Manufacturers and Proprietors.

MANUFACTORY—Poughkeepsie, N. Y.

Office and Warehouse, 165 Greenwich-st., New-York.

Halsted's Patent Horse Hay Fork.

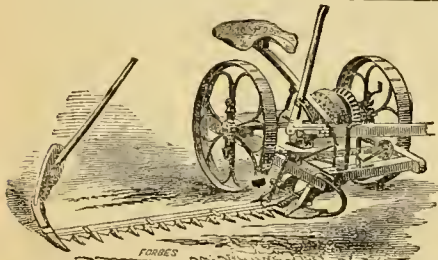
IMPROVED FOR 1866.

Halsted's Hay Fork Attachment.

IMPROVED FOR 1866.

Furnished entire or in parts. With instructions for putting up. Dealers Supplied. Agents Wanted.

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Nishwitz's Monitor Mower and Reaper.

The success of the Monitor is without parallel. It embraces every point necessary to make a Perfect Mower and Reaper. It recommends itself to every farmer for the simplicity of its construction. It is proved to be the lightest Draft. It takes the preference for durability, ease of management and good work. Four different sizes. Fully warranted. For circulars giving full description, references, &c., Address

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J. N. CLOYES,

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(General Agents for Maryland and Virginia.)

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NEW-YORK STATE

Agricultural Works.

WHEELER, MELICK & CO., Proprietors,
ALBANY, N. Y.,

PATENTEES AND MANUFACTURERS OF

Railway and Lever Horse Powers,

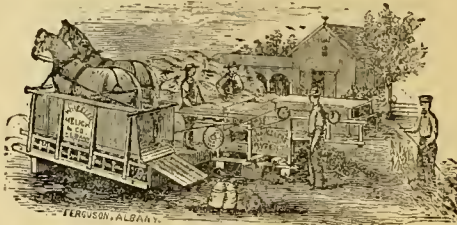
Combined Threshers & Winnowers,

CLOVER HULLERS, FEED CUTTERS, SAW MILLS,

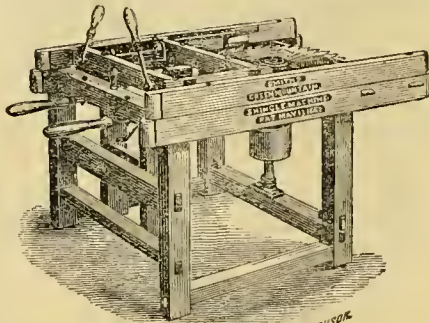
SHINGLE AND HEADING MACHINES, HORSE

PITCHFORKS, HORSE RAKES, &c., &c.

(See cuts below.)



SMITH'S GREEN MOUNTAIN SHINGLE AND HEADING MACHINE.



Descriptive Circular and Price List sent free on application.

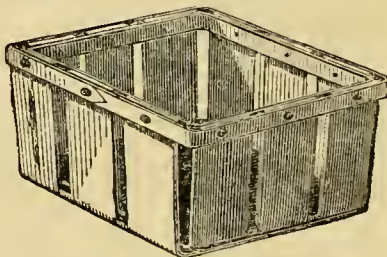
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Corn Planting! Time Saved.

Every Farmer should have one or more of THOMAS B. MCCONAUGHEY'S Patent Corn Droppers. They will positively save one half the time over the old way of dropping Corn. To all those that use the Wheel Cultivator, these Droppers are just the thing needed—as they will drop the Corn so it can be worked equally alike either way. Droppers will be sent any where by Express for \$2.00 apiece. Agents wanted everywhere. Address orders to THOS. B. MCCONAUGHEY, Newark, Delaware.

Improved Patent Hand Lawn Mower.—Simple, Cheap and Effective. Send for Descriptive Circular. Address WM. L. BOYER & BROS., Philadelphia, Pa.

THE AMERICAN FRUIT BASKET!



This favorite Fruit Basket for Strawberries, &c., is receiving the highest commendation from every quarter, and is called by many of our best Fruit Growers and Fruit Dealers, the only perfect article of the kind now in use. It is constructed so as to equalize the weight of the fruit—can be packed in less space—and when filled with fruit is exceedingly attractive in appearance.

Having the advantage of superior machinery, the Baskets are sold at a less price than any first class Basket now in market.

AMERICAN BASKET CO.,

Office No. 313 Chapel-st.,

New-Haven, Conn.

Hallock's Patent Fruit Box

Is acknowledged by all those that have used them, to be the best style of box for conveying Small Fruit to market, they being square in shape, and the bottoms are raised so as not to press on the top of the fruit in the lower box, they are light and strong, having the corners bent and not nailed, the sides are one-twelfth of an inch in thickness, and being square in shape, there is no room lost in packing in Crates.

Manufactured by C. D. DOUGHTY,

87th-st. and 3d Avenue, New York.

SEND STAMP FOR CIRCULAR.

WINTER'S IMPROVED PORTABLE CIRCULAR SAWMILL.

with ENGINE and BOILER complete. Combining LANE'S PATENT SET and FEED WORKS. THE GREATEST IMPROVEMENT EXTANT.

The entire Log of any length instantly and unerringly set at both ends, at one and the same moment of time, by the man attending the Saw. Labor-saving and Time saving. The capacity of the Mill being thereby doubled. Pamphlets furnished. WINTER & CO., No. 40 Broadway, N. Y.

NEW STRAWBERRIES.

Great Agriculturist, the largest berry known, 12 berries have been produced which weighed 1 pound, plants \$1 per dozen; \$3 for fifty; \$5 per hundred; or \$10 per thousand, five thousand at less rates.

Miss Ida, a new Seedling, more productive than the Wilson, \$2 per dozen; or \$10 per hundred.

Green Prolific, a very large and productive kind, \$1 per dozen; \$2.50 per hundred; or \$15 per thousand.

Smith's Buffalo, 50 cents per dozen; \$2 per hundred, or \$15 per thousand.

French Early Seedling, the best early berry, and Russell Prolific, \$1 per hundred, or \$3 per thousand.

Lenning's White, a splendid large white berry, \$1 per dozen; \$3 per hundred.

Brooklyn Scarlet, Monitor and Col. Elsworth, are the Tribune prize berries for which \$3000 was paid, these should be in every good collection, plants \$1 per dozen; \$3 per hundred, or \$15 per thousand.

Mead's Seedling, a magnificent new Seedling, berries six inches in circumference, \$3 per dozen.

Negro, a new kind, nearly black, \$1 per dozen.

The following 10 varieties were introduced last year from France, and Belgium. All of them produce very large berries, some of them monstrous.

Compresse de Morn, Excellent,
Zamorska, Palme,
Crystal Falls, Sonvenir de Nantis,
Monstrons de Robin, Fordenand,
La Marville, Helin Sanis.

A Selection at \$2 per dozen; or the ten, one doz. each, \$15. Address WM. S. CARPENTER, 156 Reade-st., N. Y.

Agriculturist Strawberry

For Sale at \$5 per 100, and \$10 per 1000 Plants. Also Philadelphia Raspberry at \$5 per doz., and \$10 per 100. For Circulars address ISAAC PULLEN, Hightstown, New Jersey.

JUCUNDA

We can furnish a few hundred very fine strong layered plants of this splendid new strawberry.

C. L. HOAG & CO., Lockport, N. Y.

12 OR 100 PLANTS SEND BY MAIL. WANTED genuine, and to reach the Purchaser at annexed prices. New Jersey Scarlet, 50 cts. \$12, \$3 \$100, \$20 \$1000. Agriculturist, 75 cts. \$12, \$1 \$100. French Seedling, Downer, Cutter, Russell, Buffalo, Hovey, Wilson, Albany, Lady Finger, Triomphe de Gand, Austin, Bartlett, Lenning's White, \$1 \$100. Green Prolific, Byberry Seedling, Tribune Varieties \$2 \$100. Jucunda from Knox \$3 \$12, \$3 \$25. For larger quantities, or Wilson Early Blackberry, Kittatinny, Phila. Raspberry, send for Descriptive and Price List, gratis.

JOHN S. COLLINS, Moorestown, Burlington Co., N. J.

THE TRUE CAPE COD CRANBERRY FOR Fall planting, for Upland and garden culture, and for swamps. Under my method of cultivation the yield last season on Upland was over 400 bushels per acre. Explicit directions for cultivation with prices of plants, with nursery catalogue complete, will be sent to any address. Agents Wanted.

B. M. WATSON, Old Colony Nurseries, Plymouth, Mass.

Forty Acres in Small Fruits.

Charges pre-paid on Plants. See Prices and List in March Number.

A. M. PURDY, South Bend, Ind.

To Agents and the Trade.

My Catalogue is now ready, with great inducements to Agents. B. M. WATSON, Old Colony Nurseries, Plymouth, Mass.

The Universal Berry Box.

THE CHEAPEST AND BEST.

Rims and Bottoms. Machine for putting them up. Only \$12 per 1000 Boxes!

Send stamp for Circular. Address

B. HATHAWAY, Little Prairie Ronde, Mich.

150,000 PEAR, PARADISE, QUINCE, Plum, Cherry and Apple Stocks, of prime quality. 2000 extra strong Hybrid Perpetuals, and Moss Roses, Tree Peonies, and Flowering Shrubs and Trees, for sale by B. M. WATSON, Old Colony Nurseries, Plymouth, Mass. Catalogues are now ready.

Genesee Valley Nurseries.

Rochester, N. Y.

Fruit, Ornamental Trees and Shrubs in large quantities.

EVERGREENS.—We offer an unusually fine Stock for spring, particularly Norway Spruce, 3 to 4 ft.

PEARS—Standards, a fine stock of 1st, 2nd, and medium qualities.

We also offer the finest collection and largest assortment of fine and new imported FLOWER SEEDS, ever offered in this country.

Parties wishing to purchase in large quantities should avail themselves of our several Catalogues.

Our Nurseries embrace over Three Hundred and fifty acres of Land.

Catalogues Nos. 1 and 2—Abridged retail Fruit and Ornamental Trees, Shrubs, &c.

Catalogue No. 3—Green House, Bedding Plants, Bulbs, Choice Flower Seeds, &c.

Catalogue No. 4—Wholesale and Trade List for spring of 1866.

FROST & CO.



NEW DWARF ARBOR VITÆ. TOM THUMB.

A new dwarf variety of the AMERICAN ARBOR VITÆ, originated on our grounds a few years ago; remarkable for its slow growth and compact symmetrical habit.

We have no hesitation in recommending it as an acquisition of much value in the class of small hardy Evergreens, for the decoration of Gardens, Lawns or Cemeteries, where large trees may not be admissible.

The above cut is a portrait of a specimen five years old, 15 inches in height, and 18 inches broad, drawn from nature by Mr. Geo. Frauenberger, of this city. We now offer it for sale for the first time, at the following prices:

Large Plants, 12 to 18 inches high, and about the same in breadth\$3 each.
Smaller Plants, say 6 to 8 inches, strong and well rooted, \$2 each; \$18 per dozen.

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First Class Osage Orange Hedge Plants,

Wholesale and Retail. Fruit Trees, Evergreens, Shade Trees, large and small sizes, Wilson's Early Blackberry, Dahlias, Gladioli, Tuberoses, New Roses.

Send red stamp for Greenhouse and Bedding Plant Catalogue, just issued. F. K. PHENIX, Bloomington, Ill.

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AVERAGE SIZE.

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11. Tested by 3 to ten year trial.
12. Admitted the Best Blackberry known by the highest authority, viz: Chas. Downing, Wm. S. Carpenter, Peter B. Meade, Editors Agriculturist, and every one who has tasted it. My 2-year old plants will furnish berries of medium size this season, if carefully transplanted and attended to. Order early to prevent disappointment. 1-year plants by mail, \$1.50 each; p. doz. \$12, by exp. less. For Testimonials, &c., address E. WILLIAMS, Montclair, N. J.

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2,500 Dwarf Bartlett's, Louise Bonne de Jersey's and Duchesse de Angouleme's, four to twelve feet high, three to seven years old, in bearing condition, at \$40 per 100, as my Orchards must be thinned out.

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Hale's Early Peach.

This magnificent Peach is what the Bartlett is among Pears in popularity. Ripens 2 weeks earlier than any known variety. Send for Circular.

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100,000 American Arbor Vita, White Spruce, and Hemlock, for sale. These trees have all been grown on high land and in open grounds, where they were not shaded, and are nearly as good as Nursery-raised trees. No stock will be kept out of the ground for sale. Persons wishing to get a good article in good order, therefore will do well to send their orders early in the season.

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6 to 12 inches high.....	\$ 4.00	\$30.00
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I also furnish all kinds of Horticultural stock. Catalogues furnished on application. L. L. WHITLOCK,
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One hundred thousand Red Cedar 4 to 12 inches high, for \$5 per one thousand. 10 to 15 inches \$2 per hundred, carefully handled, packed and delivered at the Depot.

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Nearly as early as Hartford Prolific, of Superior Quality, and good for both wine and the table.

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Vines for sale, at \$5 per doz., \$40 per 100, \$300 per 1000.

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250,000 GRAPE VINES FOR SALE.

CONCORD VINES from single eyes, \$10 per 100, or \$80 per 1000.

CONCORD VINES from Layers and Cuttings, from 12 to 20 Dollars per 100, or \$100 to \$165 per 1000.

CATAWBA ROOT, 25 Dollars per 1000.

Hartford, Delaware and Norton's very reasonable. Concord Cuttings, \$10 per 100. Norton's Cuttings, \$12 per 1000. Send Orders and Stamp for Catalogue to
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Including all the best sorts for Vineyards or private lands, at the lowest rates. Sent by Express, or pre-paid by mail, carefully packed. Agents Wanted. Catalogues to any Address.
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Sing Sing Grape Vines.—As I sell only grape vines grown by myself, I would hereby notify my customers and the public that my large stock of last year is entirely sold.—I shall endeavor to have a larger stock for next season.
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Grape Vines for sale.

Iona, Adirondac, Israella, Delaware, Allen's Hybrid, Rogers' Hybrids, Creveling, &c., &c.
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IONA AND ISRAELLA VINES.

I am still able to furnish vines of best quality for garden planting, to Clubs, and to individuals.

For a statement of the great advantages of purchasing by Clubs, see Club propositions, and also revised Price List for spring of 1865.

The extremely low price at which these vines are sold to Clubs will place them within the reach of the most moderate means, and the money obtainable at the end of the first season from propagators for the cuttings will repay the cost of their purchase. These vines will not be in less demand than at present, until the country is supplied, and may be expected to afford an increasing revenue in this way for years to come.

Wherever they become known there is no person that has place for them to grow, that will be without enough to furnish grapes for a generous family supply during at least four or five months of the year.

The Iona and Israella grapes are admitted by all good Judges to be greatly superior to all other native grapes, but the radical and important difference between the Iona and our heretofore leading kinds is fully understood only by those who have made themselves well acquainted with both, by actual trial in immediate comparison.

The past fall this trial was made in thousands of instances with the best Catawbas, and always with the same result. No one who has made the trial has ever said that the Iona has been or can be overpraised.

Many have conjectured that a grape of such surpassing excellence as the Iona could not be very hardy. The extreme severity of the past winter has added a vast amount of "enlative evidence," to the already demonstrative proof from all quarters, of its surpassing hardiness.

I have prepared a Pamphlet of 24 pages, with fine Engravings of the vines in bearing, that gives an accurate description of the character of these grapes, with their origin and history, also some of the opinions of Judges and Committees that have examined them the past three years, and of some that have known them thoroughly for eight years. It is sent with Price List for 2-cent stamp. Colored Engravings of the Iona sent for \$1.50. To all purchasers for \$1.00, and to Club Agents for 75 cents. It is a handsome picture for framing or for portfolio. "Manual of the Vine," a thorough and extensive treatise sent for 50 cents. It contains about 150 illustrative and chiefly original engravings, with much important matter that cannot be found elsewhere.

I have some selected vines not described on my list that are very cheap for Vineyardists, Nurserymen or Dealers.

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PARSONS & CO.

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No. 1; strong, extra plants, \$18 per doz.; \$100 per 100.

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Ornamental Trees and Shrubs in great variety, for planting singly and for massing.

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EVERGREENS

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Rhododendrons of the best grafted sorts at \$18 per doz.

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Evergreen and Deciduous Trees.

15,000 Delaware Grape Vines, No. 1, \$25.00 per 100. We are confident these will suit purchasers, as no pains have been spared in the course of propagation. Some No. 2's at \$15.00. Montgomery, Union Village, Hebeana, Allen's Hybrid, Catawba, Rogers' Hybrids Nos. 3, 9, 15 and 83, and some other varieties at equally low rates. Wilson Strawberry plants, \$5.00 per 1,000.—Norway Spruce, 4 to 7 feet high, \$30.00 per 100. White Corsican, and other Pines, 4 to 7 feet high, \$20.00 per 100. American Arbor Vita, 3 to 6 feet high, \$20.00 to \$30.00 per 100. Siberian Arbor Vita, 2 to 3 feet high, \$5.00 per 100. Larch, English Mountain Ash, fine, White Ash, Elm, Linden, and Maple, 8 to 10 feet high, \$12.00 to \$15 per 100. Turkey and English Oaks, 5 to 6 feet high, \$12.00 to \$15.00 per 100. Will be delivered at cars or boat. Packing charges reasonable.

Also, Extra Early Smooth Red, and Cook's Favorite Tomato seed mixed, the earliest, best, and most prolific of all varieties. Several bushels for sale at \$3.00 per pound. P. O. charges, 3 cts. per lb. FERRIS & CATWOOD,
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Bloomington Nursery, 240 Acres! 14th Year!

Apple, 1 and 2 year, also 1st class 3 to 5 year Standard Apple; Dwarf Apple; Standard and Dwarf Pear, Plum, Cherry, Halse's Early Peach, Apricot, Mulberries, Currants, Gooseberry, Kitten-ny, and other Blackberries, Iona, Israella, Adirondack, with general assortment of Grapes, Apple and Pear Root Grafts, Nursery Sprouts, Currants, etc., etc. Osage Orange, fine 1 year, Wholesale and Retail. Potatoes, Cucumber, Culi, Pikeaye Rastycocot, also Calico, Early Goodrich, Gleason—Evergreens, very large stock, mostly medium and small sizes.—Ornamental Trees and Shrubs, Roses, the very largest and best assortment we know of, over 600 varieties.—Johannis, Lilies, Gladioli, Tuberoses, Peonies—Green-House and Bedding Plants.—Having Eight large Houses we can furnish a Splendid Floral Collection. Send 2 Red Stamps for Catalogues, Address

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CHOICE SEED.

I would again invite the attention of the public to my Annual Catalogue of choice and reliable garden seeds, embracing over two hundred varieties, over one half of them of my own growing. I would invite particular attention to the following list of new, rare, or very desirable vegetables. Marbled Mammoth Cabbage, (the king of all cabbages, sometimes weighs 60 lbs., and averages 30 lbs. by the acre. No cabbage will grow so large in the hot south as this. My seed are grown from the very largest and best of heads. I was the original introducer of this, and one of the best of the varieties in the following list.) Stone Mason Cabbage, (a very large drumhead, remarkably reliable for heading, very profitable for market, heads very hard and very tender. Put up in half oz. packages, or sold by the pound.) Bur-nell's King of the Dwarfs, (the earliest of all cabbages, new, just from England, very fine and sweet flavor.) Richmond's Compact Brussels Sprouts, (new, and of a number selected for its very dwarf and compact habit.) Mammoth Sweet Corn, (the largest sort known, weighing two to three pounds to the ear; very sweet. It took the first prize at the Annual Exhibition of the Mass. Hort'l Socy, of 1864.) Mammoth French Squash, (weighs from 100 to 200 lbs.) Mammoth Chieory, (an improved French variety, largest of all.) American Turban Squash, (the driest, sweetest and richest flavored of all fall squashes. My seed [introduced this] are the purest in the country.) New York Improved extra large purple Egg Plant, (this is of larger size and of a deeper purple than the common large purple.) Striped Guadalupe Egg Plant, (grows to size of long purple, striped with yellow purple and white; quite ornamental, reliable.) Ornamental Kale, (several varieties in one package. Fine for either the Flower or Kitchen garden.) New Alma Cauliflower, (a new English variety; it has given great satisfaction.) Lenormand's Mammoth Cauliflower, (a new French sort, which promises to be the largest and most reliable variety grown.) Early Paris Cauliflower, (imported seed; a standard sort.) Word's New Melon all large; the sweetest and spiciest of all the green fleshed varieties.) Caterpillar Plants, several varieties in one package; a curious oddity from France.) Vegetable Snails, (another vegetable curiosity used by the French cooks to garnish their dishes.) Striped Leaved Japanese Maize, (a new and beautiful plant from Japan, with foliage striped with green and white, and with roses with rose snake Cucumber, (a long, curled, snake-like curiosity.) Vilmorin's new wrinkled edible fodder Pea, (the first wrinkled kind yet known, the pods of which are eaten.) Each of the above forwarded by mail, post-paid by me, at 25 cents a package. Also Early Cracker Onion, (a flat variety, the earliest of all the yellow sorts; quality very superior.) Seed of an Onion, (a new variety.) Early Red Danvers Onion, (an early, round red variety, of a fine bright color.) Early Extra Flat Turnip Beet, (has a very small leaf top; quality excellent.) Red Castelnau's Beet, (a famous French variety, in France it has a nut-like flavor; flesh deep purple, very tender, sweet and rich flavored.) Giant Oval Mangel Wurtzel, (a new variety, sort, characterized by its firm, solid flesh, large size and commercial growth.) Dillston's Extra Early Pea, (of 116 varieties tested in England, this proved to be the earliest; seven days earlier than Daniel O'Hourke.) Tom Thumb Pea, (very early; ten inches high; very productive.) Drew's New Dwarf Pea, (new; very dwarf, peas mostly oblong, each plant forms a bushy growth, but one pea being required to about a foot of row.) Brown's New Dwarf Early Marrowfat Pea, (a new variety, which may be relied upon as both the earliest and most dwarf Marrowfat grown.) McLean's Advance, (new; dwarf, wrinkled, very early and productive; an improvement on Napoleon.) Princess Royal, (new English pea, very productive. These two new sorts have been selected as best out of over 20 new sorts.) Halse's Dwarf Marrowfat Pea, (the best pea than the Champion of England, grows but about half as high, is sweet, and excellent.) Scarlet Flowering Bean, (an English bean, quite ornamental; grows about two feet high.) Extra Long Caseknife, (a very vigorous and productive variety, has given great satisfaction.) Concord Bean, (the earliest pole bean I have been in quantity resembles Horticulturist, but yields much better.) Indian Chief, (the best string pole bean known; always in condition for stringing.) Yard Long Bean, (foliage highly ornamental; bean a curiosity.) Jet Cranberry, Mottled Cranberry, (each of these are an improvement in health, vigorous growth and productiveness, on the old-fashioned Cranberry or Tery bean.) Tilden's New Tomato; New Mexican Tomato; Mammoth Cucumber Tomato; Cook's Favorite; French Upright; Early York, and Bates' Extra Early Tomatoes, (for particular description of these, see my advertisement in another column.) Bates' Extra Early Sweet Corn, (earlier than Darling's Early, a variety of the sweet wrinkled kernalled corn, excellent for the table.) Golden Sweet, (early, tender, sweet, with a rich flavor, peculiarly its own.) Sweet Mexican Corn, the sweetest and tenderest variety I have yet found.) Late Red Cob, old-fashioned eight-rowed sweet corn, (the ears of these two varieties grow to a very large size; quality sweet and very tender, keeping a long while in condition for table use.) Chufas, (very prolific; taste very much like a fine Cocoanut.) Hubbard Squash, (the driest, sweetest and richest flavored of all winter squashes. I introduced this seed pure.) Yokohama Squash, (this new variety from Japan, has the finest grain of all squashes, with a rich, marrow-like taste.) Boston Marrow, (I consider my variety to be the purest in the United States; it took the first premium at the last Annual Fair of Mass.) Improved Green Globe Savoy Cabbage, (a bushy variety for late fall and winter use, in quality it resembles a rich Crockneck. My seed stock came from Paris, and is perfectly pure.) Swiss Chard, (the best of all the Beet family for greens, the leaf stalks are used as Asparagus.) Chinese Sugar Cane, (imported seed; pure.) Otahetian Cane, (by some preferred to all other varieties for cultivation in the North.) Covered Garden Kale, (very large, of a bright scarlet color; Market Gardeners try this.) Spry White Wheat, (a new English sort, highly recommended for poor and elevated soils; less subject to blight and rust than other varieties, and has yielded 15 per cent. more than every variety with which it has come into competition.) Feebe Bean, (warranted to be both the earliest and the hardest of all bush beans.) Improved Green Globe Savoy Cabbage, (as reliable for heading as my Stone Mason, the quality of the Savoy is superior to all other varieties for table use.) Mammoth Millet, (extra tall heads, largest of all.) True Boston

Curled Lettuce, (the most ornamental lettuce known.) Neapolitan Cabbage Lettuce, (this is one of the finest Cabbage lettuces yet introduced.) Six choicest varieties of Cabbage Lettuce, (the six finest native and foreign sorts, in one package.) White Japan Melon, (very early, remarkably sweet, very popular.) Allen's Superb, (quality very superior, by some called "King of Melons.") Orange Watermelon, (new; when fully ripe the skin peels off like that of an orange.) Early Sebce Potato, (new; has all the characteristics of the excellent Jackson White, but is ready for market from ten days to a fortnight earlier. A decided acquisition.) Early Chenery, (a new, very early, dry potato, becoming quite popular in New Jersey.) Goodrich Seedling, (new, quite early and productive.) Garnet Chili, (remarkably free from rot; large, solid, very productive; an excellent keeper.) Chick Pea, (used on the Continent of Europe as a substitute for coffee.) Yellow Lupins, (extensively used in Europe for sabboliving; highly recommended in U. S. Agricultural Report.) Improved Long Green Cucumber, (extra large; very fine.) New Jersey Hybrid Cucumber, (one of the largest and best varieties cultivated.) Ornamental Gourds, (many varieties in one package, including Dipper Gourd.) Sutton's Students Parsnip, (new, originated in England, desirable.) Chinese Rose Winter Radish, (decidedly the best of all the winter sorts, an acquisition.) Hood's Dwarf Imperial Purple Celery, (a new variety from France.) Each of the above will be forwarded, post-paid by me, at 15 cents per package, and warranted to reach the purchaser. Catalogues sent gratis to all.

JAMES J. H. GREGORY,
Marblehead, Massachusetts.

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In Best Quality Vegetable,

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Embracing everything desirable in both Vegetable and Flower Seed Department. For sale in quantities to suit purchasers at the lowest market rates. Descriptive Priced Catalogues furnished gratis, and all information as to prices, for larger and stated quantities, promptly given on application.

BRAZILIAN POP CORN BY MAIL. This corn has been acclimated and raised two years in Ohio. For expansiveness, softness when popped, fine flavor, and productiveness it is very much superior to any other. Soil and cultivation being good, it yields from six to fifteen ears to the plant, the shuckers bearing like the main stalk. For twenty-five cents directed to J. A. HATHAWAY, Cincinnati, Ohio, one hundred and fifty grains, and for fifty cents four hundred grains will be sent post-paid.

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What they say of it!

Mr. J. J. H. Gregory—Des Moines, Iowa, Oct. 1865. I return you my sincere thanks for the good and genuine seed of different kinds I bought of you. There was considerably over one hundred dollars worth, all true to name, and excellent. The Onion Seed was the best I ever bought, and I have had a good deal of seedling from different seedsmen. Some of my Danvers Onions measured sixteen inches in circumference. ROBERT GIBSON.

Mr. Israel Whitcomb, of Hingham, Mass., writes: "I bought seed of you last season, and am satisfied. I think I shall harvest from 1500 to 2000 bushels, and I have not seen one scallion as yet."

I have grown a fine lot of Early Round Yellow Danvers, (this yields enormous crops.) Large Red, Early Red Globe, Yellow Flat or Strangus, and Early Cracker Onion Seed. I invite all who want seed that is reliable in every respect, to send for my Onion Circular for prices and detailed description of varieties, which I send gratis. No one will run any risk of losing so valuable a crop through poor seed. I have published a thorough Treatise on Onion Raising of 32 pages, with 13 illustrations, which I send to any address for 30 cents. JAMES J. H. GREGORY, Marblehead, Mass.

Connecticut Seed Leaf Tobacco Seed.

WARRANTED GENUINE.

1 ounce, 25 cents; 4 ounces, 75 cts.; 1/2 pound, \$1.25; 1 pound, \$2. By mail, post-paid. J. MASON, Agent, Sign of the "Good Samaritan," 42 State-st., Hartford, Conn.

10,000 POUNDS CABBAGE, CARROT,

Onion, Parsnip, Radish, Spinach, Turnip and all other desirable Garden Seeds, in large or small quantities. Also in Boxes. Wholesale and Retail Catalogues now ready. Agents Wanted. B. M. WATSON, Old Colony Nurseries and Seed Establishment, Plymouth, Mass.

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Solanum Jasminoides.

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This Roofing is the lightest known, weighing fourteen ounces in the yard, yet is warranted permanent, and as tight as any Roofing ever made.

It rolls up and unrolls like Oil Cloth, is perfectly pliable and elastic in any weather, and is a ready roofing, furnished ready for use, and can be laid down by any sensible working man according to directions furnished by the undersigned.

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This Fertilizer always produces superior crops of Grass, Corn, Wheat, Oats, Barley, Rye, and Buckwheat, of Potatoes, Turnips, and Beets, and is most excellent for Trees, Shrubs, and Vines.

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Call and see us or send for a Circular. Address or call on RICARDO & CO.,

195 Water-st., near Fulton, New York.

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We also prepare a very valuable Concentrated Fish Fertilizer, which we offer at the low price of \$2.00 per barrel. Try it in your Corn or Cabbage fields, the result will satisfy. Samples of Fish Guano sent by mail. Address

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Which they are now offering at the reduced price of \$50 per ton of 2000 lbs. Also Meat and Bone Compost—a superior article for spring crops, at \$40 per ton.

A liberal discount to Dealers. Address TASKER & CLARK, 8th and Washington-sts., Phila.

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The attention of Farmers and Agriculturists is called to this article, as superior to anything else offered in the market. Equal to Peruvian Guano, and costing much less.

We offer this fertilizer in lots to suit all purchasers. A liberal discount made to the Trade.

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BY EDWARD EXFIELD.

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With Whittier's own beautiful lines at the close of the poem, all those who peruse *Snow-Bound* cannot fail to sympathize.

"And dear and early friends—the few

Who yet remain—shall pause to view

These Flemish pictures of old days;

Sit with me by the homestead hearth,

And stretch the hands of memory forth

To warm them at the wood-fire's blaze!

And thanks untraced to lips unknown

Shall greet me like the odors blown

From unseen meadows newly mowed,

Or lilies floating in some pond,

Wood-fringed, the wayside gaze beyond;

The traveller owns the grateful sense

Of sweetness near, he knows not whence,

And, pausing, takes with forehead bare

The benediction of the air."

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The soil is rich and productive, varying from a clay to a sandy loam, suitable for Wheat, Grass, Corn, Tobacco, Fruits and Vegetables. This is a great fruit country. Five hundred Vineyards and Orchards have been planted out by experienced fruit growers. Grapes, Peaches, Pears, &c., produce immense profits. Vineland is already one of the most beautiful places in the United States. The entire territory, consisting of forty-five square miles of land, is laid out upon a general system of improvements. The land is only sold to actual settlers with provision for public adornment. The place on account of its great beauty as well as other advantages has become the resort of people of taste. It has increased five thousand people within the past three years. Churches, Stores, Schools, Academies, Societies of Art and Learning, and other elements of refinement and culture have been introduced. Hundreds of people are constantly settling. Several hundred houses are being constructed, and it is estimated that five hundred will be built during the summer. Price of Farm land, twenty acre lots and upward, \$25 per acre. Five and ten acre, and Village lots for sale.

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Early Fruits and Vegetables

are here produced at least two weeks earlier than in the most favored sections North of us.

Our daily communication with Baltimore by Steamers, and by RAILROAD (shortly to be in operation) with Philadelphia and New York will give to PRODUCERS every facility for shipment.

PEACHES are produced with but little care, in the greatest perfection, and the productiveness of the trees continues for many years.

The native GRAPES of all the finer kinds, as well as all the smaller fruits flourish here in the most luxuriant manner, being free from rot, blight, or mildew.

For general crops of

GRAIN AND GRASS

the soil is unsurpassed by any portion of the country, while the price of the land is from 1/4 to 1/2 that of inferior lands in less favored sections.

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SOON OR BY-AND-BY, to purchase Land, should write to the undersigned for Circulars giving full particulars about the 500,000 Acres of Prairie, Timber and Coal Lands, for sale in Northern Missouri, on the most liberal terms, by the Hannibal & St. Joseph R. R. Co.

An advertisement of any reasonable length cannot tell the whole story; therefore send for our gratuitous advertising documents. Extra copies are cheerfully furnished to such as wish to induce others to emigrate with them. A Sectional Map, showing the exact location of all our lands is sold at thirty cents. Address GEORGE S. HARRIS, Land Commissioner, Hannibal & St. Joseph Railroad, Hannibal, Mo.

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The Residence of the late John Rankine, Esq. This very desirable Property is situated in the beautiful Village of Canandaigua, Ontario Co., N. Y., and contains sixty-three acres, or thereabout, of excellent land, mostly underdrained, and in a high state of cultivation. The House, which is large and commodious, stands on rising ground one mile north-east of the Post Office and Railway Station, and commands a delightful view of the Lake and part of the Village. The Garden and Orchards are well stocked with choice fruit, and adjoining the immediate surroundings of the house, is a fine Grove of about 15 acres.

For particulars apply to the Subscriber on the premises.

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A valuable Farm, containing 110 acres, near Princeton, N. J., opposite the residence of Ex-Gov. Olden. The site is one of the finest in the country on which to erect a country-seat;—near Churches, Colleges, Schools, &c. Only two hours distant by railroad, from New York or Philadelphia. Trains arrive and leave for either city several times daily. Will be sold cheap and on accommodating terms. Apply personally or by letter, to FEESE & SWAYZE, Bankers and Real Estate Brokers, Trenton, N. J.

600 Maryland and Virginia Farms and Timbered Lands.

Catalogue of Maryland and Virginia Lands, with Geographical description of Maryland, for sale by R. W. TEMPLEMAN & CO., Land Agents, 37 Lexington-st., Baltimore City, embracing a description of the soil and products of Maryland. Send 25 cents for a copy of Catalogue.

SUPERIOR FARM LAND.—20,000 Acres, Franklin Tract, at Newfield, Gloucester County, New Jersey, on the Railroad running from Philadelphia to Cape May 30 miles South of Philadelphia—adjoining the Vineland Tract, and 2 miles North of the Vineland Station—for sale at low prices and on easy terms, in lots to suit purchasers. Circulars, with reports of Solon Robinson, Hon. William Parry, and others, with full information, sent to applicants free. Address JOHN H. COFFIN & CO., Newfield, Gloucester Co., N. J. Improved Farms also for Sale.

WANTED—A FIRST CLASS GRAIN AND grazing Farm of 100 acres or more, situated in Central or Western N. Y., with good Buildings, plenty of Fruit, well watered, free from stone, near Railroad or water communication. P. D. HULST, Brooklyn, N. Y. Give description, price &c.

(Business Notices \$2.00 per Agate Line of Space.)

A Curiosity for Ladies.

There is on exhibition at the salesroom of Messrs. Wheeler & Wilson, No. 625 Broadway, the first sewing-machine, (No. 1.) made by that Company, the present number being about 220,000. Let the interested compare the machine sold in 1851 for \$125 with those now offered for \$55. The former owner of this machine gives its history as follows:

"This machine was finished early in 1851, and I learned its use from Mr. Wilson himself. I was thus, you see, the first to work the Wheeler & Wilson Machine, and learned on the first machine they ever manufactured.

"In 1854 I earned with the machine \$295, beside doing my own housework and taking care of my baby. In 1856 we came to Davenport and brought the machine with us. I believe it the first machine ever brought to Iowa.

"I ran that machine almost constantly for more than fourteen years, on all sorts of work, from the finest dressmaking to the heaviest tailoring; I quilted a full sized white bedspread with it, which has been exhibited three times at the Fair. It took me three weeks to do it with my other work; but it could not have been done by hand in as many years. I have even stitched leather with it, and at the time I exchanged (in 1865) it for 193,320, it worked just as well as when made.

"It is perhaps unnecessary for me to add that I believe the Wheeler & Wilson to be vastly superior to any other machine made.

Yours, respectfully,

P. E. B.

Time tries all things. Use only furnishes the final test. Opinions of the skillful may be of value, but time is needed to confirm them. All failures have had their advocates. It is noteworthy that the Sewing-Machine for which the highest premium was awarded at the World's Fair here in 1853 long since sunk into merited oblivion. The past fifteen years has seen numerous machines, with high sounding pretensions, rise with a flourish, confound the simple, and vanish. So will it be while credulity lasts.

The Wheeler & Wilson Company fixed upon the "Lock-Stitch" as the one best suited to the general purposes of sewing, for beauty, permanence, elasticity and economy of thread, and experience has confirmed the preference. It was at liberty, then as now, to make a chain-stitch machine, and even now, at a cost of less than 10 cents each, can adapt its lock-stitch machine to make the chain-stitch as well as the lock-stitch, but not believing in the stitch, has steadily refused to give it any kind of indorsement.

While this Company has given to the public the best fruits of inventive genius, it has guarded it from a multitude of traps. Attachments have been added for various purposes, as hemming, binding, braiding, cording, &c.; but it has been kept free of all useless complications. Simplicity of parts, and adaptation to the widest range of work, has been the constant aim. Instead of boasting of a variety of useless stitches and movements, it claims to make but one kind of stitch, and that with the fewest movements possible. Hence the machine may run constantly for fourteen years, like the No. 1, above mentioned, or a lifetime, even, and work just as well as when new. With a complication of parts and movements it would require monthly repairs and adjustments. As the purchase of a sewing machine is, or may be, an act for a lifetime, care should be had in getting what time and use have approved.

THE GREAT FAMILY SEWING MACHINE.**GROVER & BAKER'S****HIGHEST PREMIUM****Elastic Stitch****SEWING MACHINE.****495 Broadway, New York.****JUCUNDA—Our No. 700 Strawberry Plants By Mail.****GOOD INVESTMENT.**

We will send by mail, post-paid, and guarantee their safe carriage, 25 good strong plants for \$5; 60 for \$10.—By express 100 plants for \$15; 1000 for \$100. Each plant, with ordinary care, will produce 100 additional the first season. An outlay of \$5 will secure in six months 2000 plants—\$10, 6000 plants. As but few plants of this remarkable Strawberry have been disseminated, the demand, for some years to come, at high prices, will be very great. The most profitable time to secure valuable new varieties, is when they are first introduced.

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Box 155, Pittsburgh, Pa.

NIAGARA**FIRE INSURANCE COMPANY,**

No. 12 Wall Street.

CHARTERED 1850.

Farm Risks taken at very low rates by all our Agents.

CASH CAPITAL, - - - \$1,000,000**Surplus, Jan. 1, 1866, - - - 296,030**

LOSSES liberally adjusted and promptly paid.

JONATHAN D. STEELE, President.

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BRICKS.

The NATIONAL BRICK MACHINE is a clay tempering machine, and with only

TWO HORSES MAKES

30,000 GOOD BRICKS PER DAY.

If the machine does not do this, it will be TAKEN BACK AND THE MONEY REFUNDED. For Rights and Machines Address ABRAHAM REQUA, General Agent, 130 Broadway, N. Y.

THE GREAT AMERICAN TEA CO.'S CIRCULAR.

As many parties throughout the country wish to avail themselves of the advantage of obtaining their teas at WHOLESALE PRICES, we have made extensive arrangements for supplying that demand. Our profits are based upon the sale of ONE THOUSAND CHESTS PER WEEK.

All the goods we sell are warranted to give perfect satisfaction, or they can be returned at our expense and have the money refunded. This makes it perfectly safe to parties ordering, as no one can have any doubt of our responsibility.

Parties will see by the examination of the following price-list that we are selling very much below any regular country dealer.

RETAIL PRICE LIST.

OO LONG, 40c., 50c., 60c., 70c., 80c., 90c., best \$1 per pound.
MIXED, 40c., 50c., 60c., 70c., 80c., 90c., best \$1 per pound.
ENGLISH BREAKFAST, 50c., 60c., 70c., 80c., 90c., \$1, \$1.10, best \$1.25 per pound.
GREEN TEAS, 50c., 60c., 70c., 80c., 90c., \$1, \$1.10, best \$1.25 per pound.
YOUNG HYSON, 50c., 60c., 70c., 80c., 90c., \$1, \$1.10, best \$1.25 per pound.
UNCOLORED JAPAN, \$1, \$1.10, best \$1.25 per pound.
IMPERIAL and GUNPOWDER, best \$1.25 per pound.

These Teas are chosen for their intrinsic worth, keeping in mind health, economy, and a high degree of pleasure in drinking them.

COFFEES ROASTED & GROUND DAILY.

GROUND COFFEE, 20c., 25c., 30c., 35c.—best 40c. per pound. Hotels, Saloons, Boarding-House keepers and Families who use large quantities of Coffee, can economize in that article by using our FRENCH BREAKFAST and DINER COFFEE, which we sell at the low price of 30c. per pound, and warranted to give perfect satisfaction.

Consumers can save from 50c. to \$1 per pound by purchasing their Teas of the

GREAT AMERICAN TEA COMPANY,

Nos. 31 and 33 VESSEY-ST., corner Church-st.
No. 640 BROADWAY, corner Bleeker-st.
No. 503 EIGHTH AVE., near Thirty-seventh-st.
No. 205 FULTON-ST., BROOKLYN, corner Concord-st.

Country Clubs, Hand and Wagon Peddlers, and small stores (of which class we are supplying many thousands, all of which are doing well), can have their orders promptly and faithfully filled; and in case of clubs, can have each party's name marked on their packages as directed by sending their orders to Nos. 31 and 33 Vessey-st.

Parties sending Club or other orders for less than thirty dollars, had better send Post-Office drafts, or money with their orders, to save the expense of collections by express; but larger orders we will forward by express, to collect on delivery.

Our friends are getting up Clubs in most towns throughout the country, and for which we feel very grateful. Some of our Clubs send orders weekly, some not so often, while others keep a standing order to be supplied with a given quantity each week, or at stated periods. And in all cases (where a sufficient time has elapsed) Clubs have repeated their orders.

We append the second order from our Washington Treasury Department Club:

TREASURY DEPARTMENT, WASHINGTON, D. C.,
March 2, 1866.

Great American Tea Company:

Nos. 31 and 33 VESSEY-ST., NEW-YORK.

I send you herein a small list, which you will please fill up and forward to my address by the "National Express and Transportation Company," No. 43 Broadway.

L. Cass Carpenter, 2 lb F. B. and Dinner Coffee, 80c. \$0 60
J. G. Chamberlain, 4 lb Java Coffee, Green, 40c. 1 00
J. G. Chamberlain, 6 lb Java Coffee (burned, unground) 40c. 2 40
J. E. Chamberlain, 4 lb Gunpowder, \$1 25 5 00
William H. Fry, 6 lb Japan Tea, \$1 6 00
Samuel Wise, 4 lb Gunpowder Tea, \$1 25 4 80
C. B. Parkman, 12 lb Java Coffee, Green, 40c. 4 80
C. B. Parkman, 2 lb English Breakfast Tea, \$1 20 2 40
S. J. Gass, 5 lb Java Coffee, (burned, unground) 40c. 2 00
S. J. Gass, 1 lb Uncolored Japan Tea, \$1 2 00
S. H. Cuts, 2 lb Oolong, \$1 1 00
Wm. Mathews, 1 lb Oolong Tea, \$1 1 00
W. H. West, 1 lb Oolong Tea, at \$1 2 50
W. H. West, 2 lb English Breakfast Tea, at \$1 25 2 50
M. N. Abbey, 2 lb Oolong Tea, at \$1 2 00
Mrs. Putney, 5 lb Young Hyson Tea, at \$1 2 00
M. P. Wade, 2 lb Mixed Tea, at \$1 2 00
Wm. M. Clark, 25 lb Best Burned Coffee (unground) 10 00
Wm. M. Clark, 2 lb Imperial Tea, at \$1 25—best 2 50
Wm. M. Clark, 2 lb Gunpowder Tea, at \$1 25—best 2 50
A. Hall, 5 lb Oolong, at \$1—best 5 00
Trent, 5 lb Oolong, at \$1—best 5 00
Tucker, 3 lb Oolong, at \$1—best 3 00
Doolley, 5 lb Oolong, at \$1—best 3 00
Doolley, 3 lb Gunpowder Tea, at \$1 25—best 3 75
E. Kenny, 1 lb F. B. and Dinner Coffee, at 30c. 30
E. Kenny, 1 lb Uncolored Japan, at \$1 25 1 25
Total \$97 00

Enclosed please find certificate of deposit on First National Bank, Washington, for \$7. The packages you will please put in one box if possible, and direct to me at this office.

Very respectfully, yours, &c.

L. CASS CARPENTER,
Fourth Auditor's Office, Treasury Department.

MEADVILLE, Pa., March 6, 1866.
DEAR SIRS:—Your Tea and Bill received. All perfectly satisfied with the article, and would say to others go and do likewise, thereby saving themselves from 75 to 100 per cent.
Yours truly,
E. H. BRIGGS.

WOONSOCKET, R. I., March 8, 1866.
GREAT AMERICAN TEA CO.—GENTLEMEN:—I have the pleasure to inform you that I got the Tea and Receipt all right, and I have made inquiries from all that sent, and I find that it gives good satisfaction in every case. It just cost us 2½ cents per pound to get it here, so I say we saved 37½ cents per pound, and got a better article. I have had many inquiries about it, and they all say I must let them know when we send again. I am sure we shall have a very large Club next time. I remain yours, truly,
JAMES WOODHOUSE.

LITTLE PRAIRIE, Wis., March 4, 1866.
GREAT AMERICAN TEA CO., N. Y. City.
I have noticed your advertisements frequently in the papers, but seeing you advertised in the AMERICAN AGRICULTURIST, GIVES ME AN ASSURANCE THAT YOU ARE JUST WHAT YOU PRETEND TO BE. I want a caddy of your best Gunpowder Tea, say 20 lb at \$1.25, and 1 caddy of Uncolored Japan at \$1.10, say 15 to 20 lb. Send them by Express.
Yours, truly,
M. P. DISHOP, P. M.

**50 PER-CENT SAVED
BY USING**

**B. T. BABBITT'S
LABOR-SAVING SOAP.**

This Soap is made from clean and pure materials, contains no adulteration of any kind, will not injure the most delicate fabric, and is especially adapted for woollens, which will not shrink after being washed with this Soap. It may be used in hard or salt water. It will remove paint, grease, tar and stains of all kinds. One pound warranted equal to two pounds of ordinary family soap. Directions sent with each bar for making three gallons handsome soft soap from one pound of this Soap. Each bar is wrapped in a circular containing full directions for use, printed in English and German. Ask your grocer for "B. T. Babbitt's Soap," and take no other.

B. T. BABBITT,

Nos. 64, 65, 66, 67, 68, 69, 70, 72, and 74 Washington-st., N. Y.

**50 PER-CENT SAVED
BY USING**

**B. T. BABBITT'S
STAR YEAST POWDER.**

Light Biscuit or any kind of Cake may be made with this "Yeast Powder" in 15 minutes. No shortening is required when sweet milk is used.

Nos. 64 to 74 Washington-st., New-York.

The Herald of Health.

The April No. will contain an eloquent Sermon on the "VALUE OF HUMAN LIFE," from the text, "The Lord God formed man out of the dust of the earth, and breathed into him the Breath of Life," by Rev. O. B. Frothingham, besides a large number of articles on body culture and the cure of disease. This work is for the people. Every Mother should have it, also every invalid. The remainder of the volume sent for \$1.00. (March to December.) For the year, \$1.50. Single numbers, 15 cents. We also publish numerous works on Health and Disease. Send stamp for Circulars, or 30 cents for Circulars and Hygienic Cook Book, for the use of invalids and all who would know how to Cook the most wholesome food. Address MILLER, WOOD & CO., 15 Light-st., New York.

AGENTS WANTED—NEW BOOK, NOW READY.—Get the best, from official sources. THE GREAT CAMPAIGNS OF GRANT and SHERMAN. By the popular Historian, J. T. HEADLEY. Author of "Life of Washington," "Sacred Mountains," &c. Complete in one Vol. Handsomely Illustrated. The most complete work on the subject. (Hartford Daily Press.)

One of the most popular books on the War.

Grant and Sherman have found a popular Historian in the Hon. J. T. Headley. (New York Tribune.) Active Agents are selling 100 copies per week. Extra inducements offered. Send for terms. Address E. B. TREAT & CO., No. 130 Grand-st., New-York.

Mead's Conical Flow,

found among our advertisements, is one of the valuable agricultural improvements to which every farmer's notice and interest is invited.

Challenge Washing Machine.

The best in the World for \$7 to \$9.

Challenge Wringing and Ironing Machine.
See Advertisement on page 158.

TO GRAPE GROWERS AND FARMERS.

For sale at much below the market rates, a large lot of Galvanized Wire, suitable for Vineyards and Fencing. Extra inducements offered. Send for terms. Apply to
MULFORD & BIDDLE,
83 John-st., New York.

Highly Important to Parents.

A simple device for securing Bed clothes over children's feet by mail for 75 cts. Send stamp for particulars. Agents Wanted. M. L. THOMPSON, 135 Fulton-st., Brooklyn, N. Y.

Agriculturist Strawberry.

Fine plants, \$5 per 100; \$40 per 1000.
FAIRBANKS & CO., Flushing, near New York.

COPPER TIPS protect the toes of children's shoes. One pair will outwear three without tips. Sold everywhere.

See about the Patent Sewing Ripper Greatly Improved, in an advertisement on another page

AMERICAN AGRICULTURIST,

FOR THE

Farm, Garden, and Household.

"AGRICULTURE IS THE MOST HEALTHFUL, MOST USEFUL, AND MOST NOBLE EMPLOYMENT OF MAN."—WASHINGTON

ORANGE JUDD & CO.,
PUBLISHERS AND PROPRIETORS.
Office, 41 Park Row, (Times Buildings.)

ESTABLISHED IN 1842.
Published also in German at \$1.50 a Year.

{ \$1.50 PER ANNUM, IN ADVANCE.
SINGLE NUMBER, 15 CENTS.
4 Copies for \$5; 10 for \$12; 20 or more, \$1 each.

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VOLUME XXV—No. 5.

NEW-YORK, MAY, 1866.

NEW SERIES—No. 232.



PRIDE AND HUMILITY. FROM A PAINTING BY GEORGE COLE. (Goupil & Co., Broadway, New-York.)

Without stopping to discuss the moral traits of the largest and proudest of domesticated fowls, and the humblest and most abused of domestic beasts, nor to point out the merits of a fine painting well reproduced in wood, we improve the brief space left here to say a word in favor of the ass—the "unmitigated ass." Europe abounds in donkeys—so to speak, pony asses. They attain considerable size, and in fact the line between the donkey and the full sized ass is as hard to draw as between a pony and a horse. They are very cheap, easy to

keep, not liable to disease, cleanly, harder hoofed and less vicious than horses or mules, willing, capable of strong attachments, having a good deal of stupid intelligence, very sure footed and careful of themselves, long-lived and willful but not malicious. "Where there's a will, there's a way" to get along without rousing it to one's disadvantage as a general rule, and we have never seen a balkey ass that had not abundant provocation. Their bray is the only really annoying thing about them. There is good use for the both donkey and the ass in

this country—the former as a poor man's beast of burden and draught, especially in the neighborhood of large and small towns where vegetables and fruits are brought in a few miles for sale upon the streets; and were they once common, many other uses would be found for them, churning for instance. Besides, there would be a considerable sale for them as children's pets, to which purpose they are especially adapted, being smaller and much more trusty than ponys, and not so liable to stumble, bite or kick, that is, if not made vicious by bad treatment.

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AMERICAN AGRICULTURIST.

NEW-YORK, MAY, 1866.

Our date comes unfalteringly, though the bland airs and sunshine of spring were this year so tardy in their advent. This lateness of the season crowds the labors of the past month into this one, making its duties, which are always responsible, unusually arduous. There is need of system and definiteness of plan to accomplish any thing well. Hard work alone will not do it, and it will break down both man and beast. System will enable the farmer to give his hands and his teams a full hour a day of rest more than they would otherwise have, to get more labor and better labor from men and animals, and to maintain in himself and his family those cheerful tempers which promote good digestion and health in all respects. It is easier for every body, if only one works with system, and if the farmer himself will not, this need not prevent others systematising their work. Thoroughness should especially characterise the work done this month; poor plowing, slack preparation of the ground, or of the seed, imperfect sowing, or neglect of crops that need early hoeing and weeding, may be fatal to any thing like remunerative husbandry. If an average crop just pays expenses, (as in fact it very rarely does), then it is the few bushels of grain or roots, or the few pounds of hay or straw above the average in which any profit lies. The labor to secure an average crop is about all that most farmers calculate to lay out, and they hope that Providence will do so much better by their crops than they do themselves, that they will have a better than average returns. They are disappointed, of course, except in some rare cases. Those who show a better faith by their better works are "in luck" almost all the time. Their disappointments are few, and are then usually traced by them to faults of their own judgment, plans or execution.

Hints about Work.

The Stock.—"Between hay and grass" is a proverbially hard time for cattle and stock of all kinds. One's calculations are so apt to come out a little short in regard to how much it will take to carry the stock well through the winter, that it is the exception rather than the rule that farmers can feed hay, grain and roots as liberally in the spring months as the needs of their animals demand. Milch cows that have just come in, or that drop their calves during this month, before they can be turned to pasture, need first-rate care and feeding, or the flow of milk for the whole season may be essentially diminished. Young cows especially should be fed in a way to develop as much as possible every milk-producing quality, for this will influence their value throughout their lives. The renewal of their coats is a great tax upon the vital force of neat cattle and horses, and at this season they are more benefitted by regular and thorough carding than at any other. When a supply of roots has been kept through till now, feed them out, so that the transition from dry fodder to grass will not be too sudden and produce scouring. When cows are first turned to pasture, give them a little less than their usual feed morning and evening, putting them in the pasture a few hours only in the middle of the day. They will do much better for it. The same is true of heaves, which will fatten rapidly as warm weather comes on, if gradually accustomed to grass, their meal and hay being kept up just as usual. Otherwise they are apt to scour and fall off considerably. Calves if kept in warm comfortable and clean quarters and fed regularly, will increase in weight very fast. All their food should be cooked, even the hay; at least all the meal shorts or bran which is mingled with the skimmed milk, should be thoroughly cooked. When calves are fattened upon the cow, it is a fact worth remembering that it is not the cows which give the richest milk, that will bring up the most calves or fatten them the most rapidly. When milk cannot be sold, it is often very economically

disposed of by putting two calves to a good cow, and "messaging" them twice a day besides. Calves will seldom quarrel, so it is best to allow a week or fortnight's difference in their ages.

Sheep.—We are strong advocates for shearing sheep unwashed. They may thus be sheared much earlier; there is little danger of their taking cold; the coolness of the weather is supposed to influence a more rapid renewing of their covering, and by the time the summer's sun beats down hot and scorching upon their backs, they are sufficiently protected not to be blistered, as sometimes happens in late shorn flocks. All flocks ought to be dipped (see directions in Basket item, p. 172) after shearing. Unless the ticks or lice are very thick, the dipping should be postponed till warmer weather than we usually have in May. The gradual accustoming of sheep to grass is quite as important as the same treatment for neat cattle. Do not withhold the grain, but keep it up until after the flock is well established upon grass. They should also be turned to grass gradually, two or three hours a day, in addition to their full regular feeding of hay, etc. No one should overlook the great value of his stock as manure makers. This will in many parts of the country make it very remunerative to have the cows all yarded or stabled at night, and the sheep folded. The farmer rarely classifies his

Swine as Beasts of Labor; yet when the best use is made of them, they do an immense amount of hard work in the course of the summer in roofing over and mixing the manure and compost heaps, converting weeds, etc., into manure. Corn scattered over the heap now and then will encourage diligence, and a few handfuls dropped here and there into holes 20 to 30 inches deep, will secure a great upturning and mixing, which would otherwise have to be done by the fork.

Poultry.—All kinds of young poultry should have good care, especially when very young. One of the best attachments to a poultry yard is a low shed 8 feet wide, open to the south, and closed by light lattice work that will not keep the sun out. Here young turkeys and chickens may safely spend a few weeks. The hens being cooped under the sheds. The ground should of course be dry, and covered with ashes, and the surface shoveled off and the ashes renewed frequently. One secret of success with chickens is, keeping them dry; this, in connection with cleanly quarters, scalded or cooked food and pure water always before them and always fresh, will secure fine healthy flocks.

Grass and Grain Fields may receive top-dressings of liquid manure and other fertilizers, if applied early. See items in last number. Little, however, can now be done, even upon spring grain, on which timely manuring, and sometimes rolling after the ground has settled after hard rains, may be of great service. The attention of the farmer must however be chiefly directed to his

Hoeed Crops.—No hurry or lateness of the season should be allowed to cheat the crops out of well prepared and manured soil. There are several articles on corn in the body of this number, to which we refer the reader. Sorghum and Broom Corn are cultivated on the same general principles. Potatoes should be put into the ground as early as possible. Late sorts for the main crop and for winter use should not be planted with rank fermenting manure, it induces a succulent growth and a predisposition to the blight and rot. Leached ashes is excellent manure for potatoes. As a rule, plant three or four inches deep, and harrow thoroughly when the tops first appear above ground. This kills a crop of weeds, does the potatoes good, and saves work.

Sugar Beets and Mangel Wurtzels.—Every good farmer ought to plant some of one or the other of these roots for his milch stock. Sow when the ground is warm, in deep rich soil in good tilth, putting the drills 24 to 30 inches apart. They may be thinned out during the summer, and afford excellent green fodder to any kind of stock "kept up." Other root crops, Parsnips, Carrots, may be sowed in the same way, the drills closer, however.

Onions.—Old onion raisers will have looked out

for good seed long before this. There is little beside fresh seed in the country, but the demand for this renders it necessary to be on one's guard to get good. On rich land, in good tilth and not weedy, the crop is a very profitable one. Sow early in rows about 14 inches apart; it requires garden culture, and leaves the ground early for late cabbages, etc.

Tobacco ground must be prepared this month, by thorough manuring and plowing, and harrowing, to kill weeds. The seed beds may need watering with guano water, or other liquid manure, to bring forward slow growing plants, ready for transplanting before the middle of June. There should also be beds prepared in warm sheltered spots for

Cabbages.—Sow seed of late sorts for field culture (Drumheads, Flat Dutch, etc.) any time this month; sprinkle beds freely with ashes to repel insects.

Peas and Oats.—There will be many oats sowed this year in May, though below latitude 41° it is seldom advisable to sow oats alone after May 1st. When the ground is in fair heart, sow oats with the peas any time before the middle of the month in common seasons. Sow two bushels of each seed, plowing in the peas lightly and harrowing in the oats. Peas alone may be sowed as late as the 25th, and the later crop, though not so large, are free from the attacks of the pea weevil.

Implements, etc.—If not already provided, and you can pay for them, order a mower, horse-rake, and horse-fork immediately. It is very difficult to choose between the few best mowers, there is not choice enough to warrant waiting a week. Wooden toothed horse rakes do the best work, and pick up least dirt, moss and grit. Horse-forks are numerous, and most of them good; in selecting one regard lightness, strength, durability, and the ease with which it is tripped or opened. The self-raking attachment is a very valuable one in reaping machines, and when much grain is cut, it is indispensable to economical work. In providing good implements for hand labor, do not forget that

Handy Tools make work light. Good hoes, light, sharp, and strong, are best, by far, in any but very cloddy, heavy soil, and the same is true of most other tools, rakes, forks, etc.

Manure.—Our counsels are often repeated in regard to manure saving and making. The importance of the subject is our excuse, if we weary any reader. Save and buy dead animals, old horses, etc., skin them, cut them up on a load or two of muck, covering them well with the same material, or with good soil. Lie in wait o' nights to add dogs to the heap; they make excellent manure, and you save your sheep at the same time. Collect bones, paying children 15 to 25 cts. per bushel for gathering. Prepare the privy vault so as to save every thing, mixing it with muck or dry soil, getting it out and working it over once a week. It will not be offensive in the least, if well treated.

Buildings, etc.—Painting should be done when the surface is dry, but before the wood is so thoroughly dried that it will rapidly absorb the oil. Paint thus applied after moist weather, holds better and forms a much better surface than in a dry season. Level the sills of out-buildings, if thrown up by the frost. Clean out chimneys by burning or brushing during wet weather before the dry season.

Work in the Horticultural Departments.

The notes of last month were intentionally made with a wide margin, to lap over into May. In the crowded condition of our space, we are obliged to avoid repetition as much as possible, and shall this month make brief mention of, or omit altogether, those things that were sufficiently discussed in these columns last month. It is always best to look back a month or two and see if some previous suggestion is not worth acting upon now.

Orchard and Nursery.

Planting is generally well over by this time, but if any remains to be done, do it faithfully, according to hints previously given. The later the season,

the more chance of trees drying or heating in transportation, and the more care they will need before planting. Last month we mentioned the burying of trees to restore them if dried. We have seen this work wonders, on apparently hopeless cases. We once received a large box of trees, which had been long packed, in warm weather, and the buds had pushed out shoots several inches long. The trees were cut back almost to walking sticks, and planted. They all lived, and in autumn were well furnished with vigorous limbs.

Grafting may be continued, recollecting that when the tree has started to grow, the bark is easily wounded, and slips easily. Set root-grafted stocks out in nursery rows, if not already done, and

Budded Stocks, that were worked last year, need cutting back, provided the bud looks fresh and the union appears to have been formed. The stock is not to be cut at first close to the bud, but about three inches above it. This leaves a support to which to tie the rapidly growing shoot. Rub off all the buds except the one that was inserted.

Seedling Stocks that were heeled in last winter, are to be set in rows to be budded at the proper season, first shortening the tap root. If seeds for stocks are not planted, lose no time in putting them in, and weed them when they come up. The benefits of

Mulching are so great, that it will pay to be at some trouble to apply it around newly planted trees. Straw, bog or salt hay, sawdust, chips, or any similar material will keep the earth from drying, and if a dry time comes will save the necessity of watering. An account of the regular practice of mulching on a large scale was given in an article on pear culture on page 314 of last year.

Plowing, when done in the orchard, should only be entrusted to careful hands. Use short whiffletrees to the plow or cultivator and pad the ends. It is customary to put in carrots or some hoed crop between the rows of a young orchard. The war with

Insects will begin this month. If the canker worms have ascended the trees, we know of no help for them. The tent-caterpillar is more manageable, for that hangs out its sign, and it can be readily seen where he is to be found. Remove every nest, not only those found in the orchard, but from the wild cherry trees which they are apt to infest. A recent (English) Journal of Horticulture gives the following new remedy for the

Bark Scale.—A strong solution of soft soap is mixed with clay and made as thick as it will work with a brush. The whole tree is painted over with this, and it is said that the animal is unable to survive the application. We think this worth a trial, as we have seen Indians rid themselves of another kind of parasite, by plastering their hair up with clay, and wearing it in this way until dry.

Evergreens succeed better when planted this month than if removed earlier. Nursery trees are quite sure to live, provided their roots are never allowed to dry. When practicable, have the trees removed on a lowery or damp day. If they are to go any great distance, the roots should be covered with damp moss as soon as they are lifted. If the roots of any kind of an evergreen once get dry, it is a doubtful case. In setting, give good soil, and if any addition to it is needed, let it be well decomposed leaf mould or muck. Never prune off the lower branches of an evergreen, if the upper ones overhang the lower, shorten them, and endeavor to keep the tree well furnished to the base and a perfect pyramid. A few large stones placed over the roots are better than stakes. Give well established evergreens a dressing of rich compost.

Seedlings of evergreens and all other forest trees must be shaded, as noticed last month, on page 146.

Fruit Garden.

If the planting of dwarf trees is still to be done, observe the precautions mentioned under the head of Orchard and Nursery, last month, as well as this. But few persons in this country have the courage to make good shaped trees, for to do this requires a more severe treatment of the young tree, as it comes from the nursery, than most are equal to. In

the finest dwarf pear orchard we have seen, the trees were all cut back the first year to about 18 inches; of course quite young trees were planted. To meet this want of proper treatment of dwarfs, we have published Rivers' Miniature Fruit Garden, noticed elsewhere. A general outline of the course to follow to produce a fine pyramidal or bush shaped dwarf tree we described in Jan., last year.

Grape Vines may yet be planted. Brief directions were given last month. In most localities the vines are already tied to the trellis, but where there are late frosts it is better to leave them on the ground, where they can be protected. In putting them up after the buds have started, there is great danger of injuring the young shoots by careless handling. We get many letters asking how to train the vine. We have in previous volumes given the principal methods, and cannot repeat the same articles from year to year. Any one who has only a few vines, even, should have some good treatise upon the subject. We refer to April and November, 1863, and April, 1864, for illustrated articles upon the subject. Whatever may be the "system" upon which a vine is to be trained, it must first be prepared for the operation, and the attention of the cultivator must be devoted to getting a strong plant to work upon. The proper way to do this is, to let a young vine grow only one shoot the first year. The second year two buds are to be permitted to grow. Those who begin thus will have a vine upon which they may practice any kind of training they please.

Layers may be put down, and cuttings of such varieties as can be propagated in the open air may be set in a well prepared nursery bed.

Raspberries and Blackberries should have been planted last month. An article will be found on page 145, April. If the canes that fruited last year were not removed, then do it now, and thin out those which grew last year to three or four to each stool, reserving the strongest, and tie up to stakes. This of course does not apply to Black Caps. Keep down weeds and suckers, and if not done last fall, dress with manure.

Currants will do all the better if the plants are well mulched before dry weather. At the first sight of the currant worm, sprinkle the bushes with powdered white hellebore. See "Walks and Talks."

Insects will of course be a source of trouble. See some hints under Orchard and Nursery. For the Rose-bug, often so destructive to grape flowers, we know of nothing so efficacious as hand picking; indeed this is a very sure way with all the larger insects in a small garden; an hour daily devoted to this business, will be time well invested.

Strawberries.—The earlier these are in the better, but as there are cases where it is better to plant now than not at all, refer to the directions given last month. Where the plants are properly mulched, pull up the coarse weeds that find their way through the mulch. Beds coming into fruit should be mulched before the fruit gets of much size. Straw, rough hay, or corn stalks are used.

Kitchen Garden.

We here again follow an alphabetical arrangement, and refer to last month for articles not mentioned here, as well as for the earlier treatment of those here noticed. See select list of seeds given in February, and see advertisements for novelties.

Asparagus.—Do not cut from a bed less than three years planted. In cutting, care is required not to injure the plant, or the buds that still remain dormant. Slip the knife down between the shoot and the plant and cut with its edge slanting from the plant. That which is sent to market is put in bunches 6 or 8 inches in diameter, tied with a string near the top and bottom, and the lower ends cut square. Keep moist to prevent wilting.

Beans.—Plant Early Valentine and other bush sorts as soon as frosts are over. Nothing is gained by planting in cold soil. Limas are still more tropical in their habits and need hot weather. For these, and all other pole beans, set the pole first; let the soil be rich, and put a half dozen beans, with the eye down, around each pole. Those started

under glass, or in-doors, are to be set out when the weather is settled and warm. Poles six or seven feet out of the ground are tall enough. The middle or last of the month is quite early enough for Limas, in most places.

Beets.—Thin and weed those sown early, and sow early sorts as directed last month.

Broccoli and Brussels Sprouts.—Same as cabbage.

Cabbage.—Sow seed of the medium and late sorts in the open ground. As soon as the plants appear, they are liable to the attacks of the "flea," an insect which in some places renders it very difficult to raise them. A sifting of ashes, air slacked lime, or soot will be of some use. Plants raised under glass are generally ready to be put out. In transplanting, reject such as have malformed roots, or appear unhealthy. Set the smaller kinds two feet apart each way. Well enriched soil (lime with the manure is useful) and frequent hoeing are essential to success. A bit of paper, or a leaf put around the stem at setting, will keep off the cut worm and is worth trying where the number to be set is not large.

Capsicums or Peppers may still be sown under glass. Do not set out plants until settled warm weather, and then give them a favorable exposure.

Carrots.—Sow Early Horn for first crop. Weed and thin those sown last month. As soon as the rows of young carrots can be seen, pass a weeding hoe between them. Thin to four or six inches.

Cauliflower.—The general treatment is the same as cabbage. They need a very rich soil. Those already planted should have frequent hoeings. For the late crop, seed may be sown in the open ground.

Celery.—Sow seeds in the open ground. Thin young plants started under glass and shade during the heat of the day, until they get hardened.

Cress or Pepper-grass.—Sow for succession.

Corn.—The principal crop should not be put in until "corn planting time," but a small patch of an early sort may be planted to take its chances.

Cucumbers.—Plants started in pots, or on sods, are to be set in hills when frosty nights are over. Have at hand some kind of box, or cover, to protect them during the night. A box covered with any open fabric will keep off the bugs. A few hills may be planted in the hot-beds or cold frames as soon as other things are out, and they will come forward rapidly. Sow in open ground when well warmed.

Egg Plants.—If those in the hot-bed get too large before it is safe to put them out, pot them or transplant to another bed. A warm rich place should be chosen, and planting out only be done when there is prospect of continued warm weather.

Herbs.—Sow all sorts of seasoning stuffs.

Kohlrabi.—Treat like cabbage. —**Leeks.**—See April.

Lettuce.—Transplant from frame or seed bed into rich soil, a foot each way. Sow seeds in open border.

Martynia.—The pods of this are fine for pickles. Sow in hills three feet apart at corn planting time.

Melons.—Treat as cucumbers. Manure in the hills, which should be at least 6 or 8 feet apart.

Nasturtium.—Sow in warm soil, and when the plants are up, give them brush to climb upon.

Okra.—The dwarf does best at the North. Sow where it is to stand, in rows two feet apart, and thin to two feet in the rows. Do not sow until June, unless in a very warm place.

Onions.—If the sowing is not already done, attend to it the first thing. See last month.

Parsley.—Sow as directed last month.

Parsnip.—Sow fresh seed early in deep rich soil.

Peas.—Hoe and draw the earth towards them. Supply brush before they fall over. Sow late sorts and put in a row of dwarfs when there is space.

Potatoes.—Finish planting. Hoe those that are up.

Radishes.—Sow seed every two weeks for succession. Give a sifting of ashes or soot to the young plants, if there are any signs of insects.

Rhubarb.—Plants set last fall or this spring need all their leaves. Pull from established plants only. Do not cut the leaves, but remove them with a

quick, but not violent pull in a sidewise direction. A few trials will make one quite expert at it.

Salsify.—Sow early and treat like carrots.

Spinach.—Hoe, thin and weed the early sown, and put in seed for succession.

Squashes.—The bush sorts are treated the same as cucumbers and melons. In planting the running kinds, the whole land should be rich, as these get much nourishment by roots thrown out at the joints. Plant when the weather is warm, and give the young plants every protection against the striped bug. A free sifting of air slacked lime will help keep off the striped bug. The black squash bug that comes later must be hand picked.

Sweet Potatoes.—The cultivation of these at the North is now very general. If plants were raised as directed last month, they should have free ventilation, and for some time before setting out, be exposed entirely, to harden them. Plants may be bought from those who advertise them, and they will go safely by express, a long distance. The time of planting varies from the middle of May to the middle of June. A good soil and plenty of manure, are essential, and the plants may be set in rows or hills. Planting in rows is generally preferred in the garden. Spread a bountiful dressing of manure and then by means of the spade, or plowing two furrows together, form a ridge over it about ten inches high, a foot wide at bottom and three or four inches wide at the top. Upon this ridge the plants are to be set 16 inches apart. Set them by making an opening with a trowel, and inserting the plant down to the first leaf. Water the holes if the soil is not moist. Where there are more rows than one, they are made 3 feet apart from center to center.

Tomatoes.—Those under glass are to be transplanted as directed last month, or put out—according to the weather. A slight frost will kill the plant. We have given, in a basket item, a kind of shelter that may be employed in the garden; a newspaper tied over a stick, so as to form a shelter will keep off a moderate frost. A French plan of training the tomato is given in the same article.

Turnips.—Early turnips are among the most difficult vegetables to have good. They are generally sown too late. Sow as soon as the ground can be worked. Dress with ashes or soot as soon as up, and thin and hoe as soon as large enough.

Winter Cherry.—Treat the same as tomatoes.

Weeds.—Begin early if you would be master of the situation. It is much easier to destroy a young weed than an old one. There is but one specific to destroy weeds, and that is, a judicious mixture of hoe and "elbow grease."

Flower Garden and Lawn.

Those who have garden spots in cities or villages must have noticed what a sudden increase there is in the number of gardeners each spring. These chaps, "garners" they call themselves, go about "making gardens," and usually know about as much about it as the spade they carry with them. They can do a wonderful amount of mischief in a short time in a border containing perennials. They break up and scratch over the surface, leaving it so that it looks neat, charge a round price, and depart, taking along with them any nice plants that can be carried off, which are sold at the next place where they do a job. There are some decent men in this spring gardening business, but we have known many worthless vagabonds. On page 188 we have said something about

Annuals.—The limited list there given contains only the indispensables. For other varieties consult the catalogues of the seedsman. In sowing, it is well to reserve a part of the seed, to guard against failure. The sowing of the remainder at a later day will prolong the flowering season of those things which do not keep long in bloom.

Edgings are required to give a neat look to the garden. Edging tiles, so much in use abroad, are but little known here. Box is the generally used material, but is not hardy far north of New York. Old box is to be reset when it gets too ragged, or

thin below. Break the old plants up so as to leave a bit of root to each, and set anew, leaving the tops about 3 inches above the surface. Cuttings are sometimes used, but as all are not sure to grow, it is not safe to make edging from them. It is better to leave the cuttings in a nursery bed for a year, and then use the rooted ones. Ivy may be trained to make a neat edging, and Thrift, Moss Pink, and Stone Crops are used more or less.

Bedding Plants will, for the most part, go out this month. Every one must have Verbenas, Salvias, and Heliotropes. The number of plants now sold by florists as bedders, is large, and we refer to their catalogues for the list. In sowing seeds do not forget to provide for the future in the way of

Perennials and Biennials.—These are best sown in a reserve bed, where they will be out of sight, but not out of mind. Delphiniums, Pentstemons, Aquilegias, Phloxes, Foxgloves, Hollyhocks, and others, are easily raised in abundance, and there is always the chance of getting some new variety among the seedlings. Among the

Bulbs for spring planting, Japan Lilies, and Gladioluses, are the most used, and with them alone a great show may be made. Then there are the brilliant Tigridia, or Mexican Tiger Flower, the Amayllis or Jacobean Lily, Oxalis, and other desirable bulbs sold at this season. Not forgetting the

Tuberose, the most fragrant of all garden favorites. Bulbs that have been well kept, should be set in rich soil. Plant offsets by themselves to make flowering bulbs for another year. One is surer of flowers if he buys bulbs forwarded in pots.

Label everything, but especially those bulbs and roots that are to be taken up in autumn. A smooth pine stick smeared with white lead and written with a lead pencil will last for a single season. Do not neglect to seize upon every favorable place to set

Climbers.—If too late to put out perennial ones, sow annuals, such as the finer Ipomeas, Cypress Vine, Sweet Pea, Canary Bird Flower. It is rather late to start Cobaea, Lophospermums, and Maurandias from the seed, but small plants may be had of the florists.

Dahlias are to be started if it has not been already done. Put in a hot bed or frame, and cover the roots with earth. If there is no glass, put in a warm spot out of doors and cover over at night to keep them warm. When the buds start, divide the roots so as to have a root to each bud.

Spring Bulbs, as they pass out of flower, should not be disturbed so long as their leaves continue green and vigorous. When they fade, lift them.

Roses.—The slugs must be syringed with whale oil soap, and the bugs picked by hand. Turn the tender sorts from their pots into the borders.

Lawns will need to be mowed as soon as the grass is long enough to be cut by machine or scythe, and

Evergreen trees may be planted upon the lawn and in the grounds, as directed under Orchard and Nursery.

Green and Hot-Houses.

The amateur should be in no haste to bring his plants out of doors. The time for doing this must be governed by the character of the season, and it is better to be much too late than a little too early. If the plants are properly inured by abundant ventilation, they will be prepared for the change, and will not mind it. The hardiest things, such as roses and the bedding plants, should come out first. There are many things that may be turned out of their pots, others do better to have the pots plunged in the border up to their rims. When a pot is plunged, put some coal ashes at the bottom of the hole, to prevent worms from finding their way into the pot. The house, in summer time, too often presents a desolate and neglected appearance. With a slight shade and abundant ventilation there are many things that do better if left in the house. Among the things to turn into the border, are

Fuchsias. These are very fine when grown to a tall stem for the purpose of ornamenting the border. They will, of course, require stakes. Likewise *Abutilons, striatum* and *venosum*, make fine plants

in the garden; the only trouble is, they are apt to get too large, but they are so easily continued from cuttings that small plants can always be had.

Lantanas, grown with a tree-like head, are always among the showiest things in the garden. These are usually treated as bedding plants, but the best way is to grow them to a single stem, pot in the fall, and winter in a green-house. Most of the

Cactuses bloom in summer, and they make a great show when plunged in a sunny place in the border.

Sedums of all kinds, including *Crassula*, *Roechea*, and *Sempervivum*, as well as *Mesembryanthemums*, and other plants of like character, may be made to produce a most grotesque effect, if planted out on a rock work. They stand any amount of dryness.

Cuttings should be made, to keep up a good stock of young and thrifty plants. Hard wooded plants, that are difficult to strike from mature wood, will often do so easily from the young growth.

Whatever plants are left in the house should have daily attention as to watering, syringing at night, and ventilation.

Cold Grapery.

The manure placed over the outside borders last fall, is to be forked in, and if the dressing of manure was omitted then, give one now. The manner of suspending the vines while breaking, was described last month. The time for starting them must be governed by the season, as it is not desirable that they should commence their growth until it can be continued without interruption by cold weather. Warmth and moisture cause the buds to start, and these conditions are under the control of the cultivator. If the outside temperature continues unfavorable, keep the house cool by ventilation. When growth begins, the temperature of the house may gradually reach 85° at mid-day, opening only the upper ventilators. Keep sufficient moisture in the air by syringing the vines, and sprinkling the floor. When the shoots have sufficiently advanced, select the best for fruiting and next year's wood, and rub out the rest—observing that all handling of the vines must be done with great care, now that the new growth is young and tender.

Apiary in May.

The season is a notably late one, and so the flowerers, that supply honey which the bees rely upon for bringing out their early swarms, will not appear at the usual time, and swarms will be late. Many of the counsels given for the past month will be found applicable to the early part of this, and it will be well to continue feeding light stocks up to the time of abundant bloom. Unfavorable weather at the time of the blossoming of fruit trees may cut off the supply of honey from this source, and though bees may be in no danger of perishing, yet the raising of brood may be suspended, and the drones, should many have been raised, may be killed, in order to save stores. This would only occur in strong lives which commenced the season with abundant stores, and which in a time of dearth of bee pasturage would consume large amounts of honey. Such hives should be fed if they need it, especially if drones appear, for if it is necessary to kill the first stock of drones, swarming is greatly delayed.

Swarms may be thrown off in the latter part of the month, if the weather is very favorable. Have nice clean hives prepared—not freshly painted—and at least be ready to have them should any come. The full blossoming of white clover is the usual warning of the approaching of the swarming season. The combs ought to be frequently examined to discover queen cells, which look very much like peanuts, and entirely different from any other cells. They may be found upon edges of comb, or upon edges of holes in the plates of comb up among the brood. The old fashioned hives being inverted after quieting the bees with smoke, the combs may be quite thoroughly examined without much trouble. In the movable comb hives the whole interior is easily examined. When discovered, the queen cells are the surest indication of a swarm soon to come. There are usually several, and the discovery of one not sealed over, is no indication

that there are not sealed ones nearly ready to hatch.

Swarms issue during the warm part of the day, any time after the bees get well at work in the fields. When the queen leaves, she takes all the old and mature young bees that are about the hive at the time, leaving those at work abroad to return and keep up the establishment. It is the old queen that leaves, and she does so as soon as a new one is ready to take her place, which she knows by a peculiar piping sound made by the young queen for a few hours before her *debut*. A swarm, if let alone, will usually settle close by on some tree or bush, and unless the sun comes to shine upon it, will rest some hours, giving ample time to have it. A bag or box may be held under it, and the bees being very heavy with honey may be easily jarred off and into the receptacle, whence they may be poured out upon a sheet and guided into the hive. There is little fear of their stinging, and one may handle them carefully with bare hands and with impunity.

When hived, all the bees should be made to enter, the hive carried immediately to its stand, and a shade of some sort put up to screen it effectually from the sun. It is much more work to have in the movable combs than the box hive. It is usually the least trouble to put the swarm in a light box or box hive, and transfer to the other, towards evening. To get straight combs, elevate one end of the hive 30°—with the bottom board of course—keeping it perfectly level the other way. When the combs are started the whole length of the frames, it may be let down. Many who use movable combs will prefer artificial swarms. The idea that such are not as good has probably arisen from dividing before the stock was sufficiently strong, thereby not seeming as many bees as are usual in a natural first swarm.—Surplus honey boxes may be put on when apple trees are in full bloom; seldom earlier.

Four Premium SEWING MACHINES! Take Your Choice.

In order to concentrate the business as much as possible, we have hitherto limited our offers for Premium Sewing Machines to two or three kinds. Many have desired other machines, not offered. We take pleasure in announcing that we have now made arrangements to offer four double-thread machines, viz.: the **Wheeler & Wilson**, the **Florence**, the **Elias Howe**, and the **Grover & Baker**. We have had each of these machines in use in our own family, and can endorse every one of them as good. They have each their peculiarities, which are set forth by the manufacturers from time to time in our advertising columns, and in the circulars, etc., which they furnish; but they all work so well, that if we owned any one of them only, we would not give ten dollars to exchange it for any other one.

We say further, that we would not part with the last one of the four, whichever kind it might chance to be, and have no machine, for \$500.—Does this look like a wild statement? Let us see: The \$500 could be invested in U. S. Bonds, and bring perhaps \$36 a year interest. The sewing in one large family can seldom be done by two full days a week of steady hand sewing, or 4 months in a year. But with any one of these machines a woman can sew at least eight times as fast as by hand, but allowing for all the basting, etc., call it only four times as fast. Then with a sewing machine three out of four months sewing can be easily saved! Can any one hire and board a seamstress three months for \$36? We know, that any one of our \$55 to \$60 sewing machines pays for itself every year, with us.—Then, there is another important consideration. The crumpled chests, the rounded shoulders, the deformed spines, the injured eyesight, all so common among those who sew much with the needle, are avoided by those who use a machine. The benefit in this respect by far outweighs the cost of the machine.

So much for what we think and know about sewing machines. The kinds named above have been used in turn, and have all increased in favor.

Many may get a Machine free!—We always advise every man who asks our opinion, to get some good machine for his house, even if he has to sell an acre of land to do it. Our Premium offers have furnished a great number of machines without cost to the recipients, and many more may still get them. Every now and then somebody sends in a list of 70 names, saying it was gathered in far less time than expected.—There are many credits on our premium book, of partly names enough, which might be filled up this month. Any energetic person can raise an entirely new club, and get a sewing machine in a week or two. The paper is good enough and beautiful enough, to induce people to take it, and many will subscribe to help out a premium club. The money sent from each of a thousand neighborhoods to the humbugs we have this year exposed, would have paid for a large club of subscribers.—Let many of our readers take hold of the sewing machine or other premium this month. The 70 names will soon be gathered. At this season of the year we shall not be strenuous about the chance lack of a name or two from the 70 required.

TWO MONTHS

yet remain for all who want any of the general premiums in the table below, to secure them. During April several entirely new lists have been made up, and many lists under way have been filled. A thousand others can do the same this month. We have several hundred partially completed lists on our Premium Record, waiting for a few more names only. With the five numbers of this volume to show what this paper is, it will not be difficult to secure subscribers. One subscriber informs us that the exhibition of that poultry picture, on page 149 of April number, created so much interest in a company where he happened to be, that he started a club at once, and soon added names enough to secure a desired premium. A notice elsewhere announces a choice of four Sewing Machines.—We can not spare room to describe the premiums which are all very good, but will send a full **Descriptive Sheet** free to all desiring it.

Table of Premiums and Terms, For Volume 25.

Open to all—No Competition.

Names of Premium Articles.

Names of Premium Articles.	Price of Premiums.	Names at \$1.00 each.	Names at \$1.00 each.
1—Good Books—See terms below	14	25
2—Garden Seeds for a Family (40 kinds).....	\$5 00	14	25
3—Flower Seeds for a Family (100 kinds).....	\$5 00	14	25
4—Nursery Stock (any kinds desired).....	\$20 00	30	100
5—Iona Grape Vines (12 of No. 1).....	\$18 00	27	92
6—Concord Grape Vines (100 of No. 1).....	\$12 00	19	65
8—Japan Lilies (12 Bulbs).....	\$6 00	15	38
9—Downing's Landscape Gardening.....	\$6 50	15	40
10—American Encyclopedia.....	\$20 00	96	338
12—Worcester's Great Illustr'd Dictionary.....	\$12 00	19	65
13—Any back Volume <i>Agriculturist</i>	\$1 75	..	20
14—Any Two back Volumes do.....	\$3 50	..	26
15—Any Three do do do.....	\$5 25	10	32
16—Any Four do do do.....	\$7 00	13	38
17—Any Five do do do.....	\$8 75	15	44
18—Any Six do do do.....	\$10 50	17	50
19—Any Seven do do do.....	\$12 25	19	57
20—Any Eight do do do.....	\$14 00	21	64
21—Vols. XVI to XXIV do.....	\$15 75	23	72
22—The County Election, Steel Plate Col'd.....	\$10 00	18	60
24—Halt in the Woods do do.....	\$10 00	18	60
25—Norton's best No. 5 Gold Pen, Silver Case.....	\$4 50	12	32
29—Best Family Clothes-Wringer.....	\$10 00	18	53
30—Doty's Washing Machine.....	\$12 00	19	65
31—Tea Set (Best Silver Plated).....	\$60 00	67	240
43—Sewing Machine (<i>Grover & Baker</i>).....	\$55 00	70	270
44—Sewing Machine (<i>Florence</i>).....	\$55 00	70	270
32—Sewing Machine (<i>Wheeler & Wilson</i>).....	\$55 00	70	270
33—Sewing Machine (<i>Wheeler & Wilson</i>).....	\$55 00	70	270
34—Sewing Machine (<i>Elias Howe</i>).....	\$60 00	75	290
35—Melodeon (Best Four Octave).....	\$67 00	80	300
36—Melodeon (Best Five Octave).....	\$112 00	140	450
37—Piano, 7 Octave (Steinway & Sons).....	\$500 00	500	1500
38—Barometer (Woodruff's Mercurial).....	\$12 00	19	70
39—Barometer (Woodruff's Mercurial).....	\$18 00	22	95
40—The Aquarius, or Water Thrower.....	\$11 00	19	65
41—Buckeye Mowing Machine No. 2.....	\$125 00	150	480
42—Allen's Patent Cylinder Plow.....	\$20 50	31	100

No charge is made for packing or boxing any of the articles in this Premium List. The Premiums, 1, 2, 3, 8, and 13 to 25, are DELIVERED to any part of the United States and Territories, free of all charges. The other articles cost the recipient only the freight after leaving the manufactory of each. Every article offered is warranted new and of the very best manufacture.

* **Premium 1.—Good Books.**—Any person sending 25 or more subscribers, may select Books from pages 200, 201, 202, 203, to the amount of 10 cents for each name sent at \$1: or to the amount of 30 cents for each name sent at the (ten) club price of \$1.20 each: or to the amount of 60 cents for each name at \$1.50. This is only for clubs of 25 or more. The Books sent by mail or express, prepaid by us.

[Only for May and June, 1866.]

Special.....Extra

PREMIUMS

FOR

One Subscriber.

Everybody can get one of These.

One Hundred Thousand Subscribers was, until recently, our highest aim, but that point was easily secured some time ago, and we are going so rapidly towards 150,000 that we have set that down as the figure for this **Quarter Century Volume**. We intended to make it a superior volume, and the general testimony of our readers is, that this is being splendidly accomplished. The first five numbers contain 204 pages, instead of the standard 160, and the engravings are certainly large, beautiful and instructive, while so far they count up nearly 200, large and small. The character and style of many of these engravings is scarcely equaled by any of the Illustrated Journals in the Country. Well, why should not the cultivators of our country have a beautiful and tasteful journal, as well as a practical one.—We think our readers will agree that the reading matter has been valuable so far.—We mean to make the rest of the volume at least equally valuable. Do we say too much then, in asserting by advertisement or otherwise, that this 25th volume will be abundantly worth the small subscription price to every one who can be informed of its character and persuaded to subscribe for it?

But about the 150,000 subscribers. A single name more from each of a small part of our present readers will do the work. The paper will pay those induced to take it. *Will the reader please send one of these names?*

As an acknowledgement of any such favors, we propose to send one of the following books (whichever may be desired) to any one who will forward the name and pay of one subscriber for this volume. (This is *only* for names received between May 1st and June 30th—none before or after—and we can only send to those who specify which book is wanted for each name.) The books, one for each subscriber, will be delivered at our office, or sent *free* (post-paid) wherever desired. Of course two names will be acknowledged by any two books desired, three books for three names, and so on. These names can not count in the general premium list (on page 169). That list will also be continued to June 30.

Premiums (Post-paid.)

For all of 1866—\$1.50.

- A—The Rural Annual for 1866.....For One Subscriber
- B—The Rural Register for 1866.....For One Subscriber
- C—American Bird Fancier.....For One Subscriber
- D—American Rose Culturist.....For One Subscriber
- E—Bement's Rabbit Fancier.....For One Subscriber
- F—Dog and Gun (Hooper's).....For One Subscriber
- G—Fuller's Strawberry Culturist.....For One Subscriber
- H—Flax Culture, Complete.....For One Subscriber
- I—Hop Culture, Complete.....For One Subscriber
- K—Onion Culture, Complete.....For One Subscriber
- L—Our Farm of Four Acres.....For One Subscriber
- M—Richardson on the Dog.....For One Subscriber
- N—Tobacco Culture, Complete.....For One Subscriber

The above are all neatly bound in colored paper covers. The *Rural Annual* and *Rural Register* are wanted in every family. The eleven others are each wanted by a large class. The books on Flax, Hops, Onion, and Tobacco Culture, are the *best* works on these several subjects that ever have been produced, and are very valuable to every one growing the smallest quantity of any one of these crops. See further descriptions of the above books, in the list on pages 201, 202, 203. We have electrotype and stereotype plates of all these works, and can supply all copies called for.

Here then is an opportunity for everybody who desires one or more of these to get them without expense, by simply soliciting the subscription of a neighbor or acquaintance. The back numbers of this volume of the *Agriculturist*, of which new editions are now in press, will be sent to all subscribers, as soon as the names are received, and the premium books will be promptly sent to the address given for them.

New York Live Stock Markets.—

BEEF CATTLE.—The supply, though variable, has been about an average one, and prices are just about the same as a month ago, or equivalent to 15c@16c per lb. dressed weight for good cattle, and from that down to 12c@13c for poor grades. Some very good, 17c@18 ... **MILK COWS** still tend downward; few are willing to pay \$70 for a good cow, with the high price of feed and danger of the Rinderpest. Prices range from \$30@40 for poorest to fair; \$50@65 for medium to pretty good; \$65@80 for really good milkers with calf by their sides, and a few extras at higher rates. ... **Veal Calves** are coming in very freely, and prices are down to 6c@11c per lb. live weight for poor to very good. "Bobs" are only sold on the sly. ... **Sheep and Lambs** have been in full supply and are lower; shorn 6½c@8c per lb. live weight, according to quality; woolled sheep 1c@1½c higher. Spring Lambs bring \$5 to \$8 each, according to size and quality. ... **Live Hogs** are in excess of the demand; prices, 9c@10½c per lb live weight, according to quality.

For other Markets and Prices, see page 194.



Containing a great variety of Items, including many good Hints and Suggestions which we throw into small type and condensed form, for want of space elsewhere.

The "One Subscriber Premiums,"

on this page, are worthy the attention of every one. A book or two, or more, can be obtained without expense, while doing a good thing for others—for any one led to become a reader of a journal like this will surely be benefited. If we had the money in subscriptions, which has been sent to swindlers the present year, and which would not have been sent had the swindled been readers of this journal, we should now be printing at least 250,000 copies.

Beware of Stranger "Agents" for the Agriculturist.—

We hear from a few distant towns that certain strangers have appeared in some localities, representing themselves as the employed "traveling agents" of this and other journals, and exhibiting forged certificates and receipts from the publishers, giving them authority to act. They exhibit samples of the papers obtained through news agencies.—We send out no traveling or other agents, and authorize no one to sign receipts outside of the office, and allow no one to take subscribers under the regular rates.—Whenever any such swindler appears, he should be promptly arrested and brought to account. Our only agents are those who voluntarily raise premium clubs where they are known so well as to be trusted. Our premiums are open to all alike.

Soiling Cattle.—

The best treatise that has ever been published on this subject in this country, is the Essay of Hon. Josiah Quincy. It has been for some time out of print, but we are happy now to have it in our power to recommend it to our readers and to supply them too. It is neatly bound together with a biographical sketch of the author by Edmund Quincy. Price \$1.25.

Book on Manures.—

Prof. S. W. Johnson, as Chemist to the Connecticut State Agricultural Society, thoroughly investigated the various commercial fertilizers offered in the markets of that State. He gave in his reports very clear and succinct statements of the theory of manures, and rules for judging of the quality of those offered for sale, and of the quality of articles of manurial value which an agriculturist may be able to obtain. These reports are published in an octavo volume of 178 pages, and contain a great amount of valuable information on manures, peat, muck, etc., which can be obtained from no other source. Price \$1.50.

Valuable List of Books.—

A nearly complete list of all the books published in this country, on Agriculture and Horticulture, and some others, will be found on pages 200 to 203 of this paper, with brief descriptions of a part of them. (This has been in type for several months, but set aside to make room for the advertisements of others.) The list will not only be a valuable aid in selecting books for present use, but also worthy of preservation for future reference.—The prices are not nearly so high as the cost of paper and labor would demand, these being at least double former rates, while the average advance on the books in the list referred to is not 25 per cent., or one-quarter, above the lowest old prices.—One can hardly make a better investment than to place before his family a stock of good books referring to his own business. Five, ten, twenty-five, or fifty dollars worth of books put into a boy's hands will fill his head with

ideas, set him to thinking, and do more toward his future success in life, than a thousand dollars laid up on interest for him. The latter may give him more capital to start on, but with a good stock of ideas and a developed mind, he will do far better in life with a much smaller money capital to begin with. "It is the mind that makes the man," and the store of thoughts, and the exercise of the thinking and reasoning powers, are what make the mind. What would be the effect upon the great farming and gardening and fruit growing interests of this country, if every cultivator had one acre less, and its value laid out in a library of books about his business. Would it not often keep his boys out of bad company, and tend to their refinement? Would it not dignify the calling in the eyes of his family and of himself, furnish food for thought while engaged in daily toil, and by the hints and suggestions derived, promote the profit of his labors? The subject is worthy of consideration.

New Book on Peat.—

Peat is exciting much interest, both in regard to its use as fuel, and to its great value as a manure, for an amendment to soils, and as an ingredient in composts; and we are happy to announce as in press a compact, practical and popularly scientific treatise covering this whole subject, by Prof. Samuel W. Johnson, of the Sheffield Scientific School, Yale College. It will probably be ready June 1.

Country Life, by Robert Morris Copeland.

This is a handsome volume of over 900 pages, printed on fine paper and well illustrated. Its scope includes farming, gardening, green-house and graper culture, window gardening, and in short there seems to be scarcely a subject connected with rural life that is not treated upon. It is valuable as a work of reference for any of these subjects, and so far as we have examined it, its teachings appear to be plain and sound. The present is the fifth, and greatly enlarged edition. Price by mail \$5.

Hours at Home.—

This valuable magazine, valuable because instructive, interesting, and at the same time a safe one for every family, has added to its already long list of first class contributors, the names of "Ik Marvel," (Donald G. Mitchell), "Timothy Ticombe," (Dr. J. G. Holland), and Rev. Dr. Boshnell. See p. 199.

My Vineyard at Lakeview.—

This is the title of a new work upon Grape Culture, and gives an account of the failures and successes of a novice in grape growing. Works that give us the personal experience of the writer have a charm about them that no abstract treatise can possess, and while in this work personal matters are not given an undue prominence, there is sufficient of narrative to be interesting. The author has no pet theories or systems, but gives a straightforward account of what he did and how he did it, and tells the whole in a style which is at the same time clear and pleasing. The author withholds his name in order to avoid the annoyance of correspondence, to which every one is subjected who allows his name to appear in print as the raiser or cultivator of any thing. We may state that he is a cultivator of experience, and is perfectly familiar with the manner in which grapes are grown in the successful vineyards of the West. He gives us a clear account of the methods actually practised in those localities where vines are grown for their fruit. The method of pruning and training is illustrated by engravings. We predict a wide popularity for this little work, as it is just the book many have been looking for. Price \$1.25.

Sundry Humbugs.—

Here again we have a fresh lot of hundreds of letters, from all parts of the country, especially the distant West, detailing the loss of money, enclosing circulars, "confidential" letters, grand lottery schemes, tickets for magnificent prizes, etc., etc. The requests for answers are so numerous that it is utterly impossible to write to a quarter of those who ask us to do so, and they will please accept this excuse. The tickets drawing splendid prizes, sent to us for collection, usually for our own benefit, would, if genuine, give us a profit of a clear hundred thousand dollars. Suffice it to say that after repeated trials we have not found a single one of these "tickets," or "certificates" worth paying for. Take an example: A subscriber sends us \$5.25 with a ticket that calls for a splendid "English Patent Time Keeper." We call again and again on the operator, but the "boss" is never in—"has stepped out a minute or two, but will soon be in." We wait an hour at a time but he never comes.—rather the real swindler, with whom we are really talking, never acknowledges himself the party. But by a little subterfuge we ascertain that this "time-keeper" is a little card with figures and lines, etc. The thing may cost a dime, and is worth nothing.—Another ticket calls for a "sewing machine" on payment of \$5.25. After repeated calls, as before, we find it a little, almost or quite worthless thing, offered by another dealer for \$2.50.—Another \$5.25 ticket calls for a "large

silver Butter Cooler with Revolving Dish"—a leaden mass with hardly a six-pence worth of silver covered over the article. (See page 147 of April *Agriculturist*.)—Here is another case, just like scores we have looked after: "Charles K. Park & Co.'s Watch and Jewelry, 81 Nassau Street, New York," sends out very plausible circulars and tickets for sundry articles, watches, etc. Sundry subscribers send us the required sum (\$1.72) to get the prizes drawn, and we go often there. Result: There is nobody at 81 Nassau-st. who will acknowledge the name Chas. K. Park & Co., and no sign of any such party in the whole building. This is the case with at least three-fourths of the letters, complaints, circulars, etc., sent to us.—We repeat that: It is not safe to SEND MONEY TO ANY PARTY ADVERTISING BY CIRCULARS AND OFFERING TICKETS OF ANY KIND, NO MATTER HOW SPLENDID THE OFFERS MAY PRETEND TO BE.—Some of the swindlers are noticed in other items in this paper; we have not room for further particulars.—We will only ask our readers to continue to talk about this subject among their neighbors, and show them what is published in this and especially in the previous two numbers. If the people can be generally enlightened, the swindling tribe will be compelled to stop their nefarious operations for want of patronage.—The immense amount of business they have been doing the past few months is almost beyond credence. Millions of circulars have been sent out, and among the multitude reached, enough simple hearted, trusting persons have been found to pay all expenses and give large profits. On an average not one dollar's worth has been returned for each hundred dollars forwarded to them!! We speak understandingly.

"How did they get my Name?"—

This question is frequently asked, by the hundreds who send us samples of circulars, "confidential letters," etc., they have received from swindling concerns in this city and elsewhere. Some write that their names are recorded no where else in this city but on our books, and must have been obtained therefrom. This is a mistake; we allow no one except those writing the mail wrappers to have access to our letters and books for any purpose whatever; and we may add, that any circulars or other documents ever found put into the *Agriculturist*, are put there after the papers have gone into the mails, usually at the place of delivery.—The fact is, there is a class of men engaged in gathering names from all over the country. (We have before us an offer to furnish us a list of the names and P. O. addresses of "25,000 practical, responsible farmers in different parts of the country, at \$2 per 1000.") Duplicate lists of these names are sold to all who will buy them, and thus the humbug operators secure all the names they desire. One operator printed 1,200,000 swindling circulars of the same kind, indicating that his collection of names must be a pretty large one. One swindler often runs several schemes, sending his different circulars, at different times to the same person; but coming from another locality and address, and for a different object, the deception is not noticed. We recently heard of a case where two swindlers agreed to trade lists of some twenty thousand names, and then quarreled about the terms. Pity they don't all fall out and have a "Kilkenny Cat" war.

The Dead at Andersonville.—The N. Y. Tribune Association has done a special favor to the friends and relatives of the Thirteen thousand soldiers who perished in the terrible prisons at Andersonville, Geo., by issuing in neat but cheap form (25 c.) a record of the names of all who died and were buried there. Of these, 12,367 died in 1864, and 653 in 1865. The names are arranged alphabetically in States, for convenient reference—the regiment, company, rank, and also the immediate cause of death being given with each name.

What are Seeds?—Official Decision.

—A gentleman of this city wished to send some Hickory nuts to a friend at the West, and attempted to mail them at the N. Y. City Post-office. They were refused on the ground that they were not seeds, and an appeal was made to the P. O. Department at Washington, which sustained the remarkable decision of the N. Y. Postmaster. We quote from the reply of the Department: "The case as submitted by you, in which you claim that 'Hickory Nuts' should be classed as seeds under the 20th Sec. of the Act of 1863, has been carefully considered, and the Department is of the opinion that such cannot lawfully be classed under the sec. and act referred to: that said act includes such seeds as are distributed by the Agricultural Bureau of the Interior Department, and none other."—This strikes us as a most extraordinary decision, and it will interest our friends at the West, who are making every endeavor to clothe their treeless prairies with forests and wind-breaks, to know that the seeds of the most use to them are not seeds at all in the eye of the law. Nuts are shut out of the mail because they are not

distributed by the Agricultural Bureau! Who ever knew the Agricultural Bureau to send so useful a thing as tree seeds?—But as this is the standard by which the law is to be interpreted, why don't the national seed shop send out a catalogue, and let us know what are seeds and what are not. Antiquated peas, well known squashes, and all such things may be sent *ad libitum*. A friend of ours down in New Jersey gets a good share of chicken feed from the Agricultural Bureau, and all through the mail, but tree seeds to be sent West, are refused!

Knox's 700-Strawberry. — "Novice."

We have not seen this plant in fruit, but the testimony of good judges is altogether in its favor. Aside from that, we place great reliance upon the judgment of Mr. Knox himself, whose business is to grow fruit as well as plants, and he only grows the varieties which pay.

Bugs in Peas.—C. Conant, Barnstable Co., Mass. The bug in the pea comes from an egg laid in the pea when it is young. The egg hatches out a grub, which finally changes to a beetle. Scalding the peas, before planting, will kill beetles.

Flax and Hop Growing.—By far the best practical treatises on these subjects are those issued in cheap, condensed form, containing everything connected with their culture, curing, etc., with many illustrative engravings. Flax culture will be sent by mail, post-paid, for 50 cents, and Hop Culture for 40 cents.

"Eye Sharpeners."—There are sundry articles advertised under this and similar names, and several write to ask our opinion of them. Our opinion is, that the less people tinker their own eyes and watches the better it will be for both delicate instruments. If one has a valuable watch he is quite careful to place it in the hands of a skillful workman, and we advise them to pursue the same course with their eyes.

A Great Waste—Save the Bristles.

—Tons of bristles, for which many thousands of dollars would be gladly paid by brush manufacturers, are annually wasted throughout the United States. Here is a chance for farmer's boys to "do good and make money." Whenever a hog is slaughtered, pick out the bristles, tie them in a bunch, the but-ends all one way, and sell them to the country store-keeper, who will find a ready market for them in this city. See advertisement for them. §

"Free Martins" are twin heifers with with bull mates. There are numerous instances of their breeding, but as a rule they are barren.

The "Reno Oil and Land Company."

"Accidents will sometimes happen in the best regulated families," says Dr. Lore, Editor of the Northern Christian Advocate, in speaking of our admission of the above company's advertisement last month.—Well, it was a little singular, to say the least, that after rejecting many thousands of dollars from petroleum advertisements, the very first company we did admit, failed before the paper was fully printed. Happily, however, no one lost a dollar by that advertisement. Every dime invested by outsiders was carefully refunded by the projectors of the enterprise who went into it in good faith, and with the best prospects. We greatly regret that causes entirely outside of the merits of the enterprise itself, led to a suspension of operations, for had it gone on, we are confident that all of us who had a share in it, would have reaped a rich harvest. The truth seems to be, that neighboring enterprises, jealous of the large plans and excellent prospects of the Reno Company, combined to produce an unexpected run upon the banking house of Messrs. Culver, Penn & Co., who were most largely interested in the Reno Company, which, with the sudden fall in the value of oil, and of property connected with it, led to the suspension of the new enterprise. The funds of the Company were kept separate, however, and as stated above, every investor received back all he had paid in. This confirms what we stated last month with regard to the good character and honesty of the men we had to deal with, which was the basis of our confidence.

Plants Named.—We have several times requested those who send plants to be named, to take a little care with the specimens. Often several specimens are put into an envelope without any paper between them, and reach us a mass of fragments, which it would puzzle the most ardent "reconstructionist" to put together. Hereafter we shall throw all such specimens aside, as we cannot waste time in trying to make them out.... F. P. Le Fevre, Union Co., Pa. *Malva viscosa arborea*, sometimes called *Achania*, a very fine greenhouse shrub.... Mrs. J. B. Davis, Ashtabula Co., O. The

purple flower is Spiked Willow Herb, (*Epilobium angustifolium*), the other too much broken.... M. E. Wake-man, some species of *Eupatorium*, but the lower leaves are needed to determine which one.... L. P. B., Weston, Vt. *Potentilla fruticosa*, or Shrubby Cinquefoil, yellow: *Gentiana quinqueflora*, the Five-flowered Gentian, blue, and the other probably *Spiranthes cernua*.... L. T. Prill, Decatur Co., Ind. The white flower is *Chelone glabra*, or Turtle-head, the red one *Monarda didyma*, Bee Balm, and the other is *Hibiscus militaris*.... W. S. Draper, Osage Co., Kansas. Two species of *Enothera*, or Evening Primrose. *E. speciosa*, the small one, and *E. missouriensis*, the large one.

Transactions of the Illinois State Horticultural Society, 1865.—Proceedings of the 16th Annual Meeting.—This neat volume of 66 pages gives the discussions of the wide-awake horticulturists of Illinois, and is useful as embodying their present views of fruits and kindred matters. The western horticulturists are a genial people, and when they get together, many sound and some sharp things are said, all of which are faithfully recorded in this volume. Price, by mail, 50 cents. We have ordered some for our readers.

Field Culture of Strawberries.

The following plan is practised in Burlington Co., N. J., as given in the Report of the West Jersey Fruit Growers' Association: "The old plan of planting and cultivating is still the only one which meets with approval here. It is that of setting in rows five feet apart, and from ten to eighteen inches in the row, according to the vigor of the variety, and training into beds from three and a half to four feet wide, and covering in the early part of winter with fine stable manure. After picking they are sometimes cleaned and allowed to fruit a second season, though it is becoming common to pick them but a single year, it being considered less expensive to raise a new than to clean an old bed, and that the former will yield a larger crop; though the Lady Finger is reported in Beverly to pick far better at its fourth fruiting, if well cared for, than in any previous year."

Lime Wash for Out-Door Use.

"Chamberlain," of — County, Pa., writes: "I want a lime wash for fences, buildings, etc., of a neutral color. We are enveloped in black cinder here, and whitewash makes too glaring a contrast, severe on the eyes in summer."—A good whitewash is made by diffusing through the milky lime a *lime-soap*, which is insoluble in water. To make it, slake the lime, and while at the hottest add a small quantity of tallow, or other grease, and stir thoroughly. Half a pound to the peck of lime is enough. To such a wash any common coloring matter might be added—as ochre, burnt umber, lampblack, Prussian blue or a mixture to suit the taste.

In-Door White-wash.—To lime for a pallid of white-wash add, while slaking, $\frac{1}{2}$ pint common linseed oil and a handful of fine salt. Good for out-doors also. Another in-door wash is: 2 lbs French white, 1 oz. best white glue. Soak the glue in cold water, and dissolve it, heating the water carefully, to rather thin gluey consistency; add this to the whitening, stirred up in hot water, and thin for use with hot water also.

The Best Carrot for Stock.—J. B. Hallet. We prefer the Long Orange. Plow deep. Sow in rows 30 inches apart; thin 6 to 8 inches apart; cultivate with horse hoes or cultivators, and keep free from weeds. You do not give your State. If you are located at the East, it would probably be best to put the rows 20 inches apart, for you will be likely to give more hand culture. The soil must be in prime order.

The Early Horn Carrot.—The Long Orange Carrot is out of place in the garden; it should give place to the Early Horn, which is also known as the Dutch Horn and Early Dutch. It is of the best quality for the table, is early, and from its shape is readily pulled.

Plants to Grow in the Shade.—All the broad-leaved evergreens will do in the shade of trees, provided the roots of the trees do not exhaust the soil. Kalmias, Rhododendrons, Daphne, Tree Box, Ivy, Vincas, etc. Sweet Violet, Hepaticas, some of the Campanulas, Dicentra, Bloodroot, and several of the herbaceous Spiraes and Saxifrages will do well.

Caterpillars Nests.—W. Batty, Delaware Co., Pa. The nests sent are those of the Basket or Drop worm, figured in Nov. 1864. The eggs mentioned and illustrated in the January *Agriculturist* belong to an entirely different and usually more abundant insect, the Tent Caterpillar. Cutting the nests off and burning them, is sound in theory, and efficient in practice.

Soiling Cows—Will it Pay?—James Burgess, of Ontario Co., N. Y., has a small farm, and wants to make the most of it, and to have as few interior fences as possible. He calls for the testimony of those experienced in soiling cows. We hope it may be given in detail. Our own experience has been irregular and only goes part way, consisting in cutting and feeding clover, lodged oats nearly ripe, also other grain, and corn sowed for fodder, during some weeks, including most of July and August, for several seasons. The cows were kept up and had the range of a yard a few hours daily, and the fodder was cut so as to have at least some hours' sunning if practicable before feeding, being fed occasionally two or even three days after cutting. The results were very satisfactory, and we have seen fine dairy herds that never browsed grass in the field in their lives.

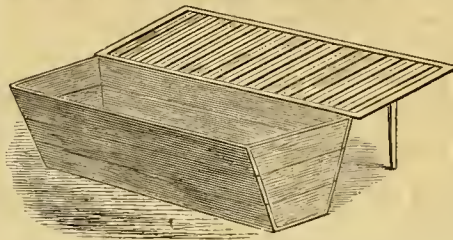
Peat as Fuel.—On page 179 will be found an interesting article on this subject, in which, however, our correspondent in his enthusiasm is led into some inaccuracies of statement, especially in regard to the value of Dr. R.—'s 15 acres of peat. The best uncondensed peat can hardly be estimated as worth more than good fire wood cord for cord, and peat shrinks in drying, so as to occupy but $\frac{1}{2}$ to $\frac{1}{3}$ its original bulk. The richer the peat, the more it shrinks. Throughout the article the distinction between compressed and simply dried peat is much lost sight of, hence the statements are loose. This note should have followed the article in question.

Trichina in Pork and in Newspapers.—In the N. Y. Daily Times of Feb. 5th, 1864, there appeared an account of the death of one person and the illness of three others, from eating ham infested by *Trichina spiralis*, and the statements of the article fortified by the sworn testimony of several physicians. The N. Y. Evening Post during the month of February, 1866, quoted two articles from foreign journals giving accounts of "great consternation in Germany," and particulars of the de-population of a German town by *Trichina* disease. On February 18th, 1866, the Chicago Sunday Times published an article with a displayed heading, reminding one of the dispatches after a great battle. Parts of this heading were: "Alarming Microscopic Revelations," "Terrible Fatality of the Disease," etc. The article was evidently made up by a person not familiar with the subject, and contained, among other engravings, one of a full-grown *Trichina*, extruding its young alive from an orifice near its head. Then in the N. Y. Tribune of March 10, 1866, we have an elaborate article to which especial attention is called by an editorial in the same issue. This essay was a careful posting up of the subject, apparently by a foreigner, or at all events by one who ignored all American facts and writers. Aside from those above referred to, articles of minor importance, and containing truth and error in varying proportions appeared in the Agricultural and other papers. That such accounts should have an effect upon the public mind is not strange, and the readers of the *Agriculturist* began to present their requests that we should tell them the facts in the case. Last month we gave them a plain, unsensational account of the whole matter, by a thoroughly competent physician. It was presented as a collection of established scientific facts, without any reference to what its effect might be upon any business interest. It seems that the pork interest has been affected by these accounts, and interested parties are trying to make it appear that the whole thing is a humbug, and that there is no such thing as *Trichina* disease. We know that the *Trichina* does exist, and we believe that it is best for people to know just what it is, rather than to have their fears excited by some partly understood evil. Measly pork has long been known, and is equally to be avoided with that containing *Trichines*, yet a writer who cautions people against that form of diseased meat, may do so without suspicion of wishing to bring down the price of pork. From our article upon the subject we have nothing to retract, because it had no other object than to present facts; but two of the daily papers seem to take a different view of their publications. The Daily Tribune of March 24th says: "It is pretty evident that interested parties have had much to do with the story of diseased pork." Which shall we believe, the Tribune of March 10th or March 24th, and which of its statements are "interested," —? — The N. Y. Times of March 26th has an article, the chief characteristics of which are dippy and unfairness, the object of which is to turn the whole thing into ridicule. As the writer seems less desirous of giving the public facts than of helping the pork trade, we have only to say that the ham which produced the fatal results so graphically described in the Times in 1864, was an American ham. Ten cases of *Trichina* disease, one of which proved fatal, are recorded by medical authorities, as having taken place in N. Y. City, and the names of the physicians under whose observation they occurred, will be given to the *Times'* writer if he wishes to verify our statement. This

we deem sufficient warrant for the remark in our article of last month, that "the number of cases reported in this country show that it exists here to an extent, which, though not to a degree to cause alarm, is sufficient to demand attention." We have thus given the subject the "attention" our readers had a right to expect, and until some new developments appear, we may dismiss it.

Tick Remedy for Sheep.—An experienced English shepherd, after looking about our city markets, hands us the following: I see among the many sheep that come to market here, many that have loose tags of wool hanging from their coat. On examining them, I find them infested with ticks. This causes the sheep to bite themselves, which loosens small portions of the wool at the root, and contact of the sheep with one another rubs it out. There is an excellent remedy for this evil, which I have long used and will give:

SHEEP DIPPING COMPOSITION.—For 100 sheep or lambs, take 3 lbs. of white arsenic pulverized, boil it well in 40 or 50 quarts of soft water, with as much as 15 or 20 lbs. of soft soap. Whea well boiled and stirred together, add water enough to make the whole 200 quarts, which is two quarts for each sheep.—As soon as the sheep are sheared, the ticks will generally go upon the lambs, therefore it is important to dip the entire flock, and I can assure all flockmasters it will repay them tenfold. The best way to perform the dipping is to have a tub made for the purpose, about 5 feet long and $2\frac{1}{2}$ or 3 feet high; let it be narrower at the bottom than at the top. Provide a lid that will fall back upon two stakes driven in the ground, and rest in a sloping position. On these lids there should



be slats about $\frac{1}{4}$ of an inch square, nailed about two inches apart. One man takes the sheep by the head and fore legs, another by the hind legs, and they dip it into the tub which contains sufficient liquid to submerge the sheep. The head is carefully kept from going into the bath. Here the sheep is held for about half a minute, and it is then thrown out upon the lid, and rubbed backward and forward over the slats, and the locks of wool wrung, so that the liquid shall as far as possible drain off and flow back into the tub.

Medical Advertisements—A Horrid Business!—On no rational ground, except that of sheer ignorance, can we explain the fact that many professedly religious journals, and others that claim to be respectable, continue to admit a certain class of medical advertisements. Some of these published in leading religious papers even, covertly advertise the worst possible "private medicines." A subscriber, in a recent note to the *Agriculturist*, well remarks "that the medical quacks do not receive their due share of attention. There is probably no one thing so readily seized upon as the prospect of, or an offered remedy for disease. The suffering invalid, with his judgment impaired perhaps by disease, becomes a ready dupe, and the more terrible or probably incurable the disease, the more eagerly he swallows the bait."—But passing by the general run of quack medicines, we refer now to a specific class. In a chance number of one of the most respectable N. Y. Dailies, or one so considered, and patronized by a large class of respectable people, we find under the head of "Medical," half a column, or thirteen advertisements, of which at least ten are really of the worst possible character. For example, the first one is addressed to "Married or Single Ladies," professing to "remove all stoppages or irregularities, from whatever cause," etc. (We only quote what is placed before your families every day in the year, in at least half the journals printed.) The 4th, 5th, 6th, 7th, 9th, 11th, and 12th advertisements, are of very similar character, some more hidden in their expressions, but all indicating what they are aiming at. These cost for one insertion \$19.00, and there is an average of as many on each of 350 days in the year, or over \$6,500 a year paid to one paper, with much larger sums paid to others. We name far less than the actual sum, when we say that \$150,000 are paid yearly by this single class of advertisers, for publicity alone. Of course they must have a large patronage or they would not continue the advertising.—What of their patrons? One of two things. Many of them send useless medicines at enormous prices. Of course none of the purchasers expose themselves by exposing the swindlers. But some of them at least do send med-

icines that attempt to effect what they propose. The result is not only "the murder of the innocents," but, in almost all cases, of the mothers themselves; or if not producing direct death, they leave a shattered constitution to drag out a miserable existence worse than death. Stung by guilt, the poor patient seldom betrays even to her companion if married, or to her most interested friends if not, the cause of her suffering. Let us say to all who put any faith in the statements of this class of murderers, for such they really are, that the pretences put forth for these medicines and operations, are FALSE, as every good physician well knows. We regret that a regard for the feelings of our readers, especially the youth, compels us not to speak more plainly. This much we could not longer refrain from saying.

Turning the Tables on Humbugs.

—The course of sin, like that of true love, does not always run smooth. To pass by the weightier matters of police interference, expenses, etc., they get some sharp letters. A "soldiers widow," whom they tried to cheat by professions of great interest in her class, and the offer of a splendid prize on receiving barely \$10, accepts their generous offer with many thanks, merely requesting them to retain the \$10 out of the great sum to be sent her.—Some cute chaps at Port Deposit sent Hammond & Co. a bogus check rather ingeniously but not very modestly signed, which the said H. & Co. accepted in good faith, and presented it for collection. Of course it was returned to them with nearly \$2 costs.—An "official" out west received a very flattering offer of some thousands of dollars, on receipt of \$10 for expenses, to which he responded as follows:

IOWA STATE AGRICULTURAL SOCIETY.
Secretary's Office, Fairfield, Iowa, March 1, 1866.
Messrs. Fletcher & Co., box 2763 P. O., New York City.
MY DEARLY BELOVED FRIENDS: Your truly magnificent offer, couched in your truly refined epistle of February 23d, is just at hand. I congratulate myself that I have secured additional evidence of my theory of the doctrine of "disinterested benevolence." I thank the lucky fortune which has given you my address, and has enabled you to fix upon myself as every way qualified to aid you in your enterprise. You certainly must be Fire-masons, Odd-fellows, Good Templars, and members of the Christian church. Your munificent benevolence almost caused me to shed tears, especially at this time, when I need a new suit of clothes, a new fence about my lot, a demijohn of whiskey, and my family needs—in one word—everything. You may send by draft on New York, which will be readily cashed at our bank here. Fifteen hundred dollars will be all that you need send now. The draft will be safer, than to send "greenbacks" by mail. Everybody has a hankering after greenbacks—postmasters not excepted. I apprehend, however, that no postmaster would steal any money from you, for they must all know of your astounding benevolence, and would scorn to interrupt any of the good ends which you have in process of accomplishment. I inwardly chuckle when I think what a good joke you will play on the Lottery Managers, when I receive the \$1500! I dare say they will appreciate it, and will be ready to make merry over it. Of course "I will show the money;" then won't my friends open their eyes in astonishment, and stand agape at the recital of my good fortune? Won't every man in the neighborhood run after a similar chance, and won't we all be rich! You hit! But I can do more than "show the money." I can, if I choose, speak of your munificent liberality, in my Annual Report on the condition of agriculture. I can publish the name and locality of your firm, and millions will address you for a share in such good fortune. Afterwards, I can publish the list of lucky men—just before, or included in our Premium Classes 18 and 19, (Jackasses and Mules.) Won't that be a big thing? Send me the \$1500, less the \$10 you ask of me, and 3 cents for postage stamp to return this answer. I will "show the money" when I get it, and show you up to the best of my ability. I am no mean writer, having read Godfrey's Cordial, McGuffey's 1st Reader, and the book that tells how John Rogers had his stake burnt with one small child and nine at the breast. You bet, I'm a scholar! Patronize me, and believe me, yours fraternically,
— J. M. SHAFFER, Secretary.

Lotteries—How even a Genuine one Works.—The Arithmetic of the Thing.

—Of the many vendors of lottery tickets in this city, at least nine out of ten are bogus, swindling concerns, in which the investors have no chance at all, and a man must have uncommon discernment and discretion to ascertain which is the tenth or genuine one.—But supposing all were genuine, let us see what chance a man would have in one. For example, take the "Royal Havana Lottery," said to be honorably conducted "by the Spanish Government, under the supervision of the Captain General of Cuba." We called at the Agency in this city, and learned the entire *modus operandi*. Take the drawing No. 756, for May 9. There are 437 prizes ranging from one hundred and sixty of \$200 each, to one of \$100,000. Total amount of Prizes, \$360,000 in gold—or equivalent to about \$450,000 in our Currency. The deductions before the prizes are paid amount to 12 or 15 per cent., or say \$50,000. This leaves \$400,000 to be distributed among the ticket holders. But there are just 30,000 tickets at \$40 each, which must all be drawn from; that is, the ticket holders pay \$1,200,000 for the privilege of drawing \$400,000, the other \$800,000 all going to the lot-

tery operators, agents, etc. It is just the same as if six men put a dollar each into a box to be drawn out by lot. If they draw the whole with perfectly fair chances, they would stand an equal chance of getting their money back, but if the holder of the box takes out and puts in his own pocket \$4 of the money, and leaves the whole six men who put in a dollar each, a sixth of a chance at only \$2, their chance would be a slim one and hardly on the square. Yet this is just what is done in this "Royal Havana Lottery" to those who buy their tickets here at "\$40 for whole tickets; \$20 for halves; \$10 for quarters; \$5 for eighths, and \$2.50 for sixteenths."—You pay your share of \$1,200,000 for the privilege of a chance share in \$300,000.—And this is about the chance one has in any lottery, however much the managers may mystify their figures, and it shows how they make such enormous profits, and why they run such risks and struggle so hard against just laws. The ticket buyers really have a very slim chance at best, or hardly a third of a chance when they pay for a whole one—yet the foolish hope that they may be successful, and so keep on investing money, because somebody somewhere has drawn a prize.—A word more. What is a man's chance in the above drawing, for example. Only 437 persons in 30,000 can by any possibility get any prize, that is one person in sixty-nine. To pay \$40 for one sixty-ninth of a chance to get even \$200 is not a very promising investment.—Again, there are only 44 of the 30,000 ticket buyers, or about 1 in 700 who can by any possibility get over \$500.—Surely a man must have large faith in his luck to put down \$40 for only one chance in 700 to get one of the prizes.—Unfortunately, it is only those who have always been "unlucky," and are likely to be, and those who do not or can not look into the arithmetic of the thing, that will and do patronize lotteries.

About "Doctors."—Old subscribers are well aware of our position concerning advertising "doctors," but as we get many letters asking about this or that one, we presume that our many new readers do not understand it. We put all those who set forth their own abilities in print—who give accounts of remarkable cures, and who propose to treat cases by mail, in one class. They are persons whom we would not employ, nor would we advise any one else to do so. We know nothing of them individually, for they are not the kind of people whose company we seek, and they are very sure to keep clear of us. A personal application by letter can only bring the reply: we know nothing of the person.

Fitting the Journals to Balance Wheels.—A balance wheel which it is necessary to take off from its journal, should have its hub bored out and the hole made tapering. The journal should have a corresponding taper, and a nut on the end for securing the wheel, instead of a key fitting a slot. The taper should correspond with the hole and should not be more than one-eighth of an inch in the diameter of the hub.

More Ditching Plows.—Those who have good ones should advertise them; we have numerous inquiries. They are little used at the East, and we are not sufficiently familiar with the best modern ones to recommend any particular plow.

Caloric Engines for Farm Use.—Dr. "C. H. R." Springfield, Ill. We value so highly a steam boiler on a farm that for our own part we would hardly think to inquire into the merits of an engine which ran without a boiler. However, for some farms, where the steaming of fodder, cooking of hog feed, etc., is not now considered desirable, the case is different. If any one has used a caloric engine for farm purposes, we shall be glad to hear from him concerning its merits. It certainly has the advantage of greater portability.

Stacking Geer for Horse Forks.—J. P. Dudley, San Jose, Cal. We figured an arrangement for stacking with a horse fork, (p. 177, June,) in the last volume of the *Agriculturist*. There are other good plans, however, one of which is simply a pair of tall shears, guyed so as to have a play each side of the perpendicular of a few, say 4, feet. Two tall poles are chained together at the top where the fork is hung, and the butts are spread 12 to 15 feet apart. Oak pins are thrust through the butts, about 6 inches from the ends, so that they may easily be shifted along with a crowbar, a few feet at a time, as the stack grows. Some 8 feet in length of the stack is made at once; then the shears are shifted. This makes a long stack.

Corn Markers.—These implements are almost always home-made. So we give some hints about them almost every year, for corn ought to be planted in very true rows. We gave an engraving and description of an excellent one last year (p. 149, May). An improvement is suggested by P. L. Thompson, of Morris Co., N.

J. The marker consists of three runners, the outside ones being movable on the cross pieces, to mark rows different distances apart. A pole is hinged in the middle and falls on either side, and to this a chain is attached, where it will mark the path of one of the outside runners in coming back. Mr. T. suggests that the chain track ought to be made for the middle runner to follow, for the driver in this case would have only to look ahead.

A Convenient Tool Sled.—Every farmer should have one or more tool sleds, according to the number of teams employed on the farm, as they are far more convenient for transporting plows, harrows, and many other implements to and from the field, than wheeled vehicles. The illustration herewith given represents one of these sleds. There are two pieces of hard wood scantling, two inches wide, four inches thick, and eight feet long, with the forward ends dressed off on the under side like a sleigh runner, and chamfered as shown at the rear end, so that the sled will pass over



obstructions more easily than if the bottom were straight. Hard-wood planks, 1½ inches thick and three feet long, are pinned, bolted, or spiked to the runners, and upon these 2x3 strips (raves) should be nailed. Four or five carriage bolts should pass through the runners, planks and raves on each side, and as the wood shrinks, the nuts should be screwed up tight. A clevis may be taken from a plow and attached to the forward end, as shown by the illustration, or a clasp and ring may be bolted on rigidly. When making such a sled, those parts of the runners, planks and raves, which are brought in contact with each other, should be well smeared with coal tar to exclude water, which will cause rapid decay if permitted to enter the seams. The advantages of such a sled over a wagon, or cart, are, that it can be employed for hauling stones, stumps, sods, and manure for short distances, and boys can load plows, harrows, or bags of grain on it, when they would not be able to put such things on a wagon or cart; and more than all, the injurious exposure of wheeled vehicles to storms and sunshine is thus avoided. When a team is driven to the field to plow, no vehicle is more convenient than such a sled for carrying all necessary tools, extra plow points, the water jug, etc.

The Miniature Fruit-Garden.—By Thomas Rivers.—This is a reprint of a work by one of the most widely known fruit-growers in the world. It has been reproduced entire from the 13th London edition. Every one who grows fruit trees in the garden will find in this some useful hints, and it contains the most complete directions for treating dwarf trees as dwarfs, of any book with which we are acquainted. Price, \$1.00.

Garden Culture of the Tomato.—Tomatoes grown in field culture, lie about without any supports, but in the garden the plants pay well for the trouble of training. In former numbers we have given several trellises and supports, and we now give the plan followed by the French gardeners, which they claim gives very early and large fruit, as well as abundant crops. The plants are started in the usual way under glass, and at the proper season are set out, each one being furnished with a single stake about six feet high. The plant, as it grows, is tied to the stake. When the first cluster of blossom buds appears, the lateral shoots which appear in the axil of each leaf below it, are carefully pinched out, leaving but a single stem, surmounted by a cluster of flowers, and a bud which will serve to continue the stem. This bud will develop three leaves and a cluster of flowers, and all the axillary shoots upon it are removed, and the stem is kept carefully tied up; and so on. The vine is kept to a single stem, without branches, and bearing only leaves and clusters of fruit. The writer who describes this method in the *Revue Horticole*, states that he gets an



average of 60 large tomatoes from each plant, and that their greater earliness brings him a price which pays well for the increased trouble over ordinary culture. The same writer has a plan for covering his plants, when first put out, to protect them from late frosts and cool nights, which will be readily understood from the figure. A double handful of straw, with the butts evened, is placed around the stake in the form of a cone, tied, and the upper ends bent down and tied again. This, when closed, forms a shelter which may be opened in the day time toward the south, and closed at night.

Milk for Children—Not always Good.—We have long thought it not best to use, especially for young children, the milk from breeding cows. Analysis, by Lassigne, showed that as cows approach calving time, their milk is essentially changed in its constituents, being deficient in casein and milk sugar, and abounding in albumen and uncombined soda. From what is well known in regard to the human subject, we might well infer that milk of breeding cows is not wholesome. Our own practice, for ten years past, has been to keep a farrow cow specially for supplying milk for our children. A second rate, but healthy cow, one not too valuable to slaughter, is kept for this purpose, and after 6 to 10 months, according to her milking capacity, she is dried up and fattened for the butcher, and a new milk cow substituted. The fattened cow about pays for the fresh one, so that this involves little extra expense, and the result upon the little ones certainly seems to be favorable. This is of course more important where infants are wholly brought up by hand, and we commend the subject to those thus situated. The matter is discussed more fully in the *Agriculturist* for February, 1856 (Vol. XV, page 117).—Unfortunately we have not a copy of that date to supply.

Coal Tar on Walls.—E. C. Hubbard, Erie Co., N. Y. Coal Tar on the outside of a brick wall, will not prevent its absorbing water from below. But probably in laying a brick wall, coal tar might be so incorporated with the mortar, that a few courses laid in this tar mortar would be an effectual barrier to the ascent of moisture from the ground. Perhaps, even bricks might be dipped in tar and laid so as not to weaken the wall. Asphaltum has been used for mortar ever since the town of Babel was built—at least it was used there, and has stood very well, considering the circumstances.

The Practical Entomologist.—This little sheet is very cleverly conducted, and endeavors to be, as its name indicates, "practical." It was started by some enthusiastic naturalists upon the plan of sending it free to all who would remit postage. Its circulation being much larger than was anticipated, and involving an unexpected amount of labor, its publishers have wisely concluded to charge 50 cents a year hereafter. Send subscriptions to E. T. Cresson, 518 South 13th-st., Phila.

Vegetable Queries.—"A. L. G." Jasper, Tenn. Martynia is exclusively for pickles, the ripe fruit being used. The plant is figured on page 113, and directions for pickles given on page 104 of the *Agriculturist* for April 1864. Chervil. Of this there are two kinds, the common Chervil, of which the leaves are used for flavoring in the same manner as Parsley, and the Parsnip Chervil, which has an eatable root and is cooked like the potato. This last is sown in September or October, the same as carrots, and is ready to harvest the next year in August. Cauliflower is raised like cabbage; the head is boiled tender in water, and dressed with drawn butter.

A Musical People.—Music in the household is something more than a luxury. It refines, elevates and soothes, while affording unexceptionable pleasure. A growing taste for it is an encouraging indication of healthy growth in civilization. The Internal Revenue Taxes, returned by the principal manufacturers of Cabinet Organs, Harmoniums, Melodeons, and similar instruments, for the months of October, November and December, 1865, are of interest as showing the amount of business done in a single branch of the trade. The whole aggregate of Pianos and other musical instruments sold annually in this country must be immense. The total taxes paid were reported as follows: Mason & Hamlin, \$6,382.92; Geo. A. Prince & Co., \$3,139.86; S. D. & H. W. Smith, \$2,522.76; Cahurt, Needham & Co., \$2,177.16; Estey & Co., \$1,218.18; X. Spang, \$987.42; Taylor & Farley, \$933.07; B. Shoninger Melodeon Co., \$925.66; Peloubet & Son, \$898.14; Jewett & Goodman, \$771.72; Treat & Linsley, \$769.20; Kinnard, Dreher & Co., \$498.72; A. C. Chase, \$436.08; H. R. Phelps, \$343.80, or a total of over \$22,000 paid by these firms alone on melodeons. This is 5 per cent. on \$440,000. The value of Pianos made is of course vastly greater.

Walks and Talks on the Farm.

No. 29.

Last Sunday morning, (March 18), just as I was getting ready to go to church, Sprightly asked me to come and look at the sheep. Five of them were down, and trembling all over. They were ewes, with lambs two or three weeks old. We had them in the bay in the barn, and fed them with pea straw and a little over half a pint of corn, each, a day, giving them water regularly at noon. They did uncommonly well, the lambs were strong and healthy, and the ewes were in fine condition. Saturday was a very cold day, and during the night the west wind pierced through any ordinary protection. Still the lambs stood it admirably, but the ewes were all of them drooping, and five were down and unable to get up. I immediately got some warm gruel, and ginger, essence of peppermint, and whiskey. By the time this was ready, two of them were dead. I drenched the other three, but one of them died in an hour or so, and the other two during the afternoon. In the meantime two more were taken. I gave them warm gruel, with a wine glass of whiskey each. One of them recovered, and in an hour or two was as well as ever. The other I kept alive for thirty-six hours, with heavy doses of brandy, but she died some time during the second night.

Apost mortem examination showed no organic disease that I could discover. The only unusual symptom was that the large stomach was full of water. The man who has charge of them is faithful and reliable, and he says he watered them regularly every day. Otherwise I should account for their loss in this wise: The sheep were fed grain and dry food, and, as they were giving milk, would require considerable water. Now, should it happen that they were allowed to go without watering for a day or two, and were then given a liberal supply, it is probable that some of them would drink more than was good for them. The water was cold, and the sheep, being already chilled by the cold night, their nervous system would receive a shock from which it could not recover. This is just what happens when persons die in summer from drinking a large draught of cold water.

I do not say that my sheep had not been watered, but if such were the case, and they were then given all they would drink on Sunday morning, the probabilities are that they would be prostrated by it, and show all the symptoms manifested on this occasion. Many people think sheep do not require water, and this absurd notion has a bad effect. Farm men, not to say farmers, who are especially opposed to what they call "theories," are more than all others influenced by any erroneous notion they may adopt. The Doctor would say that this is the result of "Adam's Fall." Error is more natural to our minds than truth, just as thorns and thistles grow more freely than wheat and potatoes—and more especially on vacant, uncultivated ground. With the mind, as with the field, a smothering crop is the easiest way of getting rid of such weeds and notions. Sow the seeds of truth thickly, and keep sowing, and if errors are not eradicated they will be greatly weakened.—"I hear you have lost some sheep," said one of my neighbors, "what was the matter with them?" "They drank too much cold water." "Very likely," he replied, "too much water is bad for sheep." There you see this absurd notion cropping out again. I did not explain, but of course the cause was not giving them too much water, but giving them too little.

Had they had water freely at all times as they needed, they would not have drank too much.

The Squire and neighbor B. heard that an alarming epidemic had broken out among my sheep, and came over in the afternoon. Before I saw them they had time to investigate the matter, and had agreed on their verdict. "Have you been feeding these sheep buckwheat?" they asked. "Yes," I replied, "I have fed it to them occasionally, (here they exchanged significant glances), *but it is over a year ago.*" "Have you given them any this winter, sir?" asked the Squire in the tone of a lawyer cross-questioning a witness. "Not a grain; I only feed it when it is cheaper than corn, and this winter it sells for more than corn." "Do you suppose," I asked, "that the buckwheat I fed a year ago could have produced the death of these five sheep, for if so I shall probably lose the whole flock, for they all had it?" After a few moments' hesitation the buckwheat theory was given up and "grubs in the head" adopted. "Perhaps so," I replied, "but it is curious that the grubs should 'eat through,' as the saying is, all at the same moment, and still more curious that the whiskey should have cured one of the sheep that was affected."

Just as they went away I heard them say: "Been feeding too much corn." I let it go at that. I have been feeding liberally, but cannot for a moment believe that this is a cause of the sudden death of the sheep. If it was apoplexy, it is not likely that six or seven should be attacked all at once, with none before or after. I am raising the lambs for the butcher, and feed the ewes liberally all winter, knowing that this would produce rich milk and fat lambs. And it is a fact that, as the *Agriculturist* said some time since, "a little grain fed to the ewes will make the lambs grow like weeds." But blessed is that farmer who attends to his own stock, or who at least has a fixed habit of seeing daily that their wants are regularly supplied.

I think I am improving in this respect. The absolute necessity of constant supervision is a truth soon brought home to any one who attempts to gain a living by farming. I believe in liberal feeding—both plants and animals. But this is by no means all that is necessary to insure success. If you manure land, it should be evenly spread, and if you feed grain, it should be fed regularly. Animals, to thrive well, must be kept quiet and comfortable. They must be easy in their minds. A harsh word should never be spoken to them. They should be petted. But who ever found a farm man that would do it? I have had men who would shout at cattle so loud that you could hear them half a mile, and they evidently thought it manly to speak to even a gentle cow as though they would take her head off. The reason why so few amateur farmers, so called, succeed, is the want of attention to details. General plans, general directions, however excellent, will not answer. It is the little foxes that spoil the grapes.

Frost is a great pulverizer. It beats Cross-kill's clod crusher. If our clay soils are under-drained and fall-plowed, so that the frost can act upon them, they will become as friable as marl, and produce far heavier crops than those of a more sandy character. Our dry, hot summers are also favorable to working stiff soils. You shake your head. But it is so. I am aware that wet clay lands will bake, in our climate, as hard as bricks. But that is not the fault of the climate. It is the best climate in the world for an enterprising, intelligent farmer who keeps ahead of his work. When I came to this

country first, nothing astonished me more than to see the ease with which even clay land could be made mellow and friable. I wish all our grumblers could have a year's experience on an English clay farm, in a mild winter and a wet summer. They would be better able to appreciate their privileges, and perhaps would be induced to avail themselves of the opportunity afforded by our splendid, hot summers, for cleaning, working and mellowing the soil. I have no patience with a man who lets his corn or potatoes grow to weeds. Keep the cultivator going, and it will not only kill the weeds, but make the soil as mellow as a garden. I cultivated some of my corn, last year, over ten times, and will do it again this year. It pays—pays on the corn and pays, even more, on the future crop.

It is a great mistake to think that weeds cannot be killed. They can, and if farmers really believed it, and would go to work vigorously, commencing early in the season, and sticking to it as long as a weed showed its head, we should soon see cleaner land, productive farms.

How much easier it is to dig ditches in the spring than in autumn! The ground is wet and soft, and a man will dig fully one-third more ditch now than in the autumn, when the ground is dry and hard. You can, too, commence to dig much earlier in the spring than is generally imagined. My main open ditch, that I cut a year ago, was not deep enough—the water set back and stopped, or at least impeded the discharge of water from the under-drains running into it. I was determined to deepen it. There was a considerable amount of water running into it, especially from the surface. I thought the best time to do it would be on frosty days, when the surface water was frozen. We had just the right kind of weather the latter part of March. The water in the ditch prevented the bottom from freezing, but the loose soil that had fallen in from the sides was just hard enough to enable us to throw it out in cakes. I told the 'Squire I was going at it. "You can't get any men," he said, "that will go into a ditch at this season of the year." But he was mistaken. I went at it myself, and got four men to help me, and in three mornings the job was done. Nothing like trying. I did not ask the men to work at it all day. It is continuous cold that tells on the system. You can stand it very well for half a day, and if you work with a will you can do nearly as much in half a day as in a whole one. I felt proud of the ditch when it was finished. We got it a full foot lower than the tiles.

In cleaning out and deepening such ditches, most people use a long handled shovel. Give me a good Ames' spade. A shovel is an Irishman's tool, and should not be tolerated in a ditch, except to clean out the bottom. "You can tell a workman by his chips," and you can tell a good ditcher by the clean, square, unbroken spadeful he throws up. In cutting under-drains, a skillful ditcher will take out the soil clean to the depth of the spade, and will leave very little loose earth, and what he does leave will be trodden down in taking out the next layer. There is no necessity for shoveling out till you come to the bottom, and then a long handled scoop will clean the drain, ready for the tiles, better than any other implement.

I am inclined to think that, except on springy land, we need fewer under-drains than are found necessary in England. We have more rain at all seasons of the year than they have in England, but *fewer rainy days*. In this country, "it

never rains but it pours." A great portion of our rain, coming in such heavy showers that the ground cannot absorb it, passes off on the surface, whereas, in England, it comes so gently that nearly all enters the ground, and must be carried off by under-drains. Besides, in this section, the land is frozen for three or four months, and when we have a sudden thaw, the snow melts rapidly, while the ground is still frozen underneath, and passes off over the surface. Hence the great importance of surface ditches in this country. In England, where the land is thoroughly underdrained, surface ditches are of little use, the rain coming so gradually that it has time to soak through the soil to the drains.

This matter is worth looking into. I admit that it is a new idea to me. I have always supposed that, on account of our greater rainfall, we needed *more* drains than in England, and this may be true on farms where the damage is from springs, but where there is nothing but surface water to contend with, I think we can get rid of it with less trouble and expense than in England. We must provide the means for getting it off rapidly, *before it enters the soil*. By plowing the land with special reference to this point, an immense amount of water can be carried off during the thaws in winter and early spring, that would otherwise soak into the lower parts of the farm, and keep them saturated until the middle of May or June. The principal objection to this plan is, that the surface water carries off the rich, fine particles of the soil, and to counteract this we should look out for some land that could be kept in meadow, and on which this surface water, from the upland, could be used for irrigation. Of course it would be necessary to provide drainage for the low land. Irrigation is of immense benefit on grass land that is well drained, but would do more harm than good on land that is already surcharged with water.

I do not want you to misunderstand me in this matter. I believe in underdraining with all my heart. It is the one great necessity of American agriculture. But we have *so much land*, and so little labor and capital, that it is desirable, for the time being, to get rid of all the water we can in the cheapest and simplest manner possible. I am satisfied that millions of dollars are annually lost by the farmers of the United States, for want of a little care and attention to surface drainage. Last year I had a crop of oats seriously injured by water. You know it was a very hot season. I plowed the field into narrow lands, with deep dead-furrows. It was plowed across the field. In some parts of the field the water lay six or eight inches deep in the furrows, after the oats were in ear! The land was an old sod, and had been summer-fallowed for the oats. They grew very rank on the crown of the ridges, but of course along the margins of the dead-furrows, where the water lay, the oats were either killed outright or seriously injured. Now, on this same field I found, the present spring, that a few furrows, with a little use of the hoe, would have let off all this surface water, and would have saved the crop. A span of horses and two men, besides myself, (say two more,) let off an immense quantity of water in half a day, and a few hours two or three days afterwards, which, when the ground settled, made the field dry, and provided conduits for the water from subsequent rains. There is nothing more fascinating than letting off water, and every farmer should give his boys a holiday occasionally, to be very profitably spent in this delightful employment.

There is one thing about letting off surface water that will surprise any one who has had no experience in the matter. You will frequently meet with a spot from which, apparently, there is no fall. But go to work and make a channel through the lowest land surrounding it, and, in nine cases out of ten, you will find that you can let all the water off. The fact is, there is very little land that cannot be drained. Only go at it with this conviction, and a little common sense, and you will be astonished at the result. Remember, too, that it takes a great deal of heat to evaporate a gallon of water, and at this season of the year the land needs the full force of the sun to warm it. Two or three degrees of heat in the soil, in April or May, will make all the difference between a good and a poor crop.

A subscriber of the *Agriculturist* writes me in regard to Whiteside's Corn and Bean Planter, that I mentioned last year. He wants to know my *private* opinion of its merits, and whether it "comes up fully to all that is claimed for it." Did you ever know any machine that did? I have used a good many machines, but never yet found one that was in all respects perfect. It is so with this Corn and Bean Planter. It plants beans as well as can be desired, but planting corn is a more difficult matter. Beans, in this section at least, are only cultivated one way. The rows are about $3\frac{1}{2}$ feet apart, and the beans are dropped in the rows in hills about eighteen inches apart. Now, so long as the rows are straight one way, it does not much matter whether the hills are deposited at regular distances or not. An accidental variation of two or three inches makes no difference. A wheel, running over the ground, will gauge this with sufficient accuracy, but with corn the matter is entirely different. We want the hills as near straight as possible *both ways*. It is an easy matter to make the rows straight in the direction the machine goes; but the difficulty is to drop the seed at equal distances apart, so that the rows shall be straight the other way. No machine has yet been invented that will do this. It might be done on the smooth Prairie soils of the West, if anywhere, but I believe it is admitted that this work cannot be done by machinery. It is comparatively easy to get the right number of kernels in the hill, but it is exceedingly difficult to deposit the seed at the exact spot where the hill is required. This part of the work must be done by hand. The land is marked, and when the spout of the machine crosses the mark, a spring is touched which lets down the seed. A steady slow horse and a boy to drive him, with a man that has a quick eye and active fingers, who will give his whole attention to the work, can accomplish the object on smooth land with a good degree of success. I planted about forty acres with it last year, and intend to use it again this season. With proper care I can plant the corn with it *better* than I got it planted two years ago by hand. A good man will of course plant corn better than any machine; but that is not the question. Good men are very scarce, and when you have a large field to plant—that must be all got ready and marked one way before you can commence—it is desirable to get it in as soon as possible. Men, boys and women are pressed into the service. The old men will tell stories and get careless, the young men will want to race and make bad work, while the women, though better than the boys, *sometimes* talk a little more than is compatible with accurate and rapid planting.

I have planted twelve acres a day with this machine, and where the ground was not rough, we had no difficulty whatever in cultivating the corn both ways. Between planting by hand or planting with a machine, I am decidedly in favor of the latter. But I am not certain that it is not just as well to *drill* in the seed, and give up the practice of planting in hills. This practice is growing more in favor every year. The best piece of corn I saw last season was drilled in—the rows being $3\frac{1}{2}$ feet apart, and the plants in the drill about nine inches apart. The ground was thoroughly cultivated (of course only one way), and was remarkably clean, though scarcely any hand hoeing had been given. You certainly get more stalks from drilling, and I think more corn if the land is rich enough, and is *thoroughly cultivated*. If land is poor and weedy, better plant in hills and cultivate both ways.

Can corn be raised at present prices? It sells for only 60 cents a bushel. If you get 70 bushels per acre it will pay. But a crop of 25 or 30 bushels, which is much nearer the average, will *not* make any one rich.

The truth is, that wages are now entirely beyond the price of produce. Farmers cannot pay them. The Deacon tells an anecdote of a Dutch farmer who lived in this neighborhood. He had a hired man, also a Teuton, who worked for him a good many years, and as money was scarce, he took pay in stock, land, etc. One year in settling up, the farmer had to give him the sheep, when an idea seemed to strike him, "Hans," said he, "I want to make a bargain with you. You work for me a year or two, till you've got the farm, and then you shall let me work for you, till I've got it back again."

The Horticulturist has an article on the currant-worm. It is not the kind that is most troublesome in this section, though the means of destroying them are the same in either case. We have both of them here. One comes from a moth, and the other from a saw-fly. The latter are by far the most numerous. We killed the flies last year by the hundreds, soon after the bushes were leaved out. The flies at first seem to deposit their eggs on the leaves of the young suckers growing from the bottom of the bush. By cutting out these suckers, after the eggs are deposited, you can destroy an immense number of potential caterpillars. The suckers ought to be removed, in any case, for the good of the bushes. Many of the young shoots on the branches can also be cut out, and those that are left for future wood should be pinched to two or three leaves. You will be astonished how such treatment will increase the size of the fruit. The bush will be open, and there will be no useless growth. But you must kill the caterpillars, or they will cut off the leaves, and the fruit will be worthless. If taken in time, this is not as much trouble as is generally supposed. We all need a little recreation. Take it in killing the flies and the eggs. Half an hour, morning and afternoon, will accomplish wonders. But if you wait till the eggs are hatched, it is almost impossible to save the fruit. White hellebore powder, dusted from a dredging box on the bushes in the morning, while the dew is on, is the best remedy yet discovered. I have used it for years. I would not depend on it alone. Kill the flies and destroy the eggs, and then use hellebore to finish the caterpillars that escape. In this way, if your bushes have had good culture, and are well pruned, you will have a splendid crop of fruit.

When I bought this farm I found a lot of straggling currant bushes growing all round the garden by the side of the fence. The grass had been suffered to grow round them. The bushes had run wild, and were as high as the fence. There was little except long, straggling branches, with a mass of suckers at the bottom and a dense growth on top. Of course, they produced little fruit, and what there was, though they were good varieties, was very small and sour. I had the ground dug around them. I cut out more than half the branches and headed in the rest. The suckers sprang up by the score from the roots, and these I stripped off, and kept the ground free from weeds. I pinched in the young shoots during the summer, and it was surprising how much it increased the size and quality of the fruit. Of course, if I was going to set out new bushes, I should train them on a single stem, but these old, neglected hedge-row currant-bushes need not be given up. A little care and thorough pruning will renovate them much quicker than you can raise new bushes.

On strong, loamy soil the best mulch for strawberries is the hoe, till the fruit is set; then place a little new mown grass, such as the clippings of the lawn, around the plants to prevent the escape of moisture, and to keep the fruit from getting soiled. On light, sandy ground the mulch should be put on earlier, and thick enough to keep down the weeds.

The Deacon says he is in the habit of giving his cows a mess of sliced, raw potatoes every day, for two weeks, before calving. He thinks nothing is so good for milch cows. I have a quantity of small potatoes that I propose to give to the cows, but I think I shall grind them up with the cider mill and mix the pulp with meal. I have never tried it, but of late years the English farmers have adopted the system of pulping their roots for pigs, etc., instead of cooking them. I see no reason why a cider mill is not just the thing for the purpose.

Manuring Corn in the Hill.

When manure is scarce and the greatest effect is demanded the first season, or when corn is on a good sod, and a little start is wanted at first, or when the land is rather cold and the season uncertain, it is best to manure in the hill for corn. If one has a fine compost, say of swamp muck and manure, containing $\frac{1}{4}$ of the latter, after marking out, a good shovelful may be distributed to three or four hills, and the corn dropped directly upon it. If, however, the compost is made up of ashes, superphosphate, guano, poudrette, etc., singly or mingled, it must be mixed with soil and covered with a little earth besides, or the seed may be killed by coming in contact with it. Such active fertilizers, and the list is large, must always be used with care, not to have the seed injured. Yet they are needed close at hand, for the encouragement of the young plant as soon as it starts. Superphosphate, ashes, gypsum, soda-salt-peter, etc., may be applied upon the hill after the corn is up, or, at least, after planting, with quite as good effect as if put in the hill.

The list of concentrated manures which may be made on the farm, or bought, is quite large, and if any person visits the manufactories of various kinds in his vicinity he will often be able to secure much that is of value to himself, and do the shoemaker, soap boiler, brewer, tanner, butcher, or glue boiler, a favor also.



Fig. 1.—CREVECOEUR COCK.

French Varieties of Fowls.

On page 216, of the last volume of the *American Agriculturist*, we published an engraving of three varieties of French fowls. The favor with which these new breeds have been received in England is not greater than their promise in this. The little work of Mr. Saunders, (see our Book List,) which contained the above-mentioned engraving, has been revised,



Fig. 2.



Fig. 3.

and the new edition contains a number of interesting engravings, and a good deal of new matter of value. Among other subjects the French fowls are enlarged upon. As it will interest our readers, and in order to call attention to the work, we present some of the illustrations herewith. We now know of at least two poultry fanciers who have obtained birds of the Crevecoeur breed—one at the East and one at the West—and find them all that has been claimed for them. They are excellent table fowls, being plumper, fattening easier, and having better flesh than the Black Spanish. The hens are constant layers, like the last named, but do not produce so large eggs. They are hardy.

The French lay great stress upon the peculiarities of the combs of these breeds, the Crevecoeur being always horned, as in the figure of the cock; but the horns being of many different shapes, as in Figs. 2 and 3, resembling stags' horns or goats' horns. Fig. 4 exhibits the head of a Houdan cock, with its branching half double comb, while Fig. 5 shows the comb of the La Fleche, marked by the little spur, like



Fig. 4.—HOUDAN COCK.

a rhinoceros' horn. These breeds have all a great reputation as layers, and this is not surprising. Considering the immense production of eggs in France, it is natural that she should give rise to prolific breeds.

All will notice a similarity to half bred Polands, or Polands crossed with Black Spanish. It is not impossible that these breeds may remotely have had some such origin, but their great hardiness and vigor of constitution certainly does not favor the idea. In the British poultry shows French fowls are assigned to distinct classes, and prizes awarded as to the most favored.



Fig. 5.

Field Corn.

Every man has a definite notion of what field corn is—yet how different are these ideas. To the Canadian or Maine reader it means a little 5-foot variety, with 8-inch ears, and 8-rowed; the kernels usually yellow as gold, and hard as flint. He plants it in rows, 3 feet apart, and in hills 20 to 24 inches apart in the rows. It may be planted in June, and cut up in 90 days. To the Connecticut Valley and New York farmers, field corn is larger, coarser, taller, of larger ears, of more various colors and qualities—planted in hills 3 to 3½ feet apart, usually in May and harvested in September, allowing 110 to 120 or more days for it to mature enough to be cut up. As we go West and South, the size of the plant and the length of season required for its development and perfection increase; 4 and 5 feet apart is no unusual distances to find the hills, and the ears, instead of being 8-rowed and 12 to 14 inches long, as in the Middle and Eastern States, are short, thick, and 12 to 20 rowed, while the kernels lose the flinty character, in a measure, and gain a certain mealiness, and in shape resemble a gourd seed or horse's tooth. The varieties of corn are almost infinite, (if we may use the expression), and yet it is remarkable that the plant is everywhere governed by the same rules of culture, and instructions good for Maine will apply in Louisiana.

Corn needs a deep and rich soil, or especial manuring, and the ground must be dry and warm. The culture should be thorough previous pulverization, with the dissemination of manure throughout the soil, by plowing and harrowing, unless, indeed, the corn be planted on a good sward, turned under, in which case manuring with a good compost, stable manure, or some concentrated fertilizer in the hill is desirable on soils which need manuring to ensure a good crop. After planting, the culture should consist in keeping the weeds down, and the surface free and open, for the action of the air and the absorption of dew and other moisture.

The stalks should not be so crowded that they cannot mature well; and, if the culture be thorough, farmers generally err in putting the drills too far apart and letting too many stalks stand in each hill. It is much more economical of space to plant in drills; the stalks a foot apart, and the drills 30 inches to 4½ feet, according to the variety—this distance being a little less than half the height of the stalks, on an average. Never allow more than 4 stalks to a hill. If all the culture is to be done by horsepower, it pays to sacrifice a little of the land to convenience, and put the corn in hills equally distant, and in true rows, running both ways.



Fig. 1.—TEAZLES IN FLOWER.

The Cultivation of Teazles.

The Teazle (*Dipsacus Fullonum*) is a product which can be cultivated by only a few farmers, because were many to be raised, the market would be overstocked, and the prices fall below what would pay for the labor of raising them; besides, few farmers will favor a crop which occupies the land two years—i. e., two summers.

The best Teazles are produced upon stiff, clayey loams, made friable and mellow by thorough tillage and enrichment. Nevertheless, on such soils, Teazles are apt to winter-kill, probably by the "heaving" of the frost, where the ground is not well protected by snow. Good wheat land is good enough for Teazles. The seed is sowed like carrot or parsnip seed, and at the same time of the year, that is, during April and May—only the rows are put farther apart for the first crop. A common way is, put the rows three and a-half feet apart, and the next spring sow other rows between them, making the rows of one and two-year old plants, 21 inches apart. Some other root crop may be sowed with the Teazles the first season. In Europe, Teazles are often sowed in beds and transplanted to the field; and it is perhaps advisable to sow a bed so as to have good strong plants to replace any of those that may fail.

The ground should be kept loose and free from weeds. The plants are thinned to 8 to 10 inches apart, and grow freely, each forming a broad flat mass like a bull thistle. The second year they are hoed, missing plants are early replaced, and they are left to grow. They make tops 4 to 6 feet high, and heads as shown in figs. 2 and 3. Those upon the main stems, and the branches, blossom and mature at different times.

The product of an acre varies from 100,000 to 200,000 heads, 130,000 being perhaps an average. The dressing of a single piece of broadcloth is estimated to consume 1500 to 2000 heads. So an acre will answer for 60 to 100 pieces of cloth.

The heads are cut with a hooked knife, the stems being left eight inches long, the men and boys who cut them being protected with leathern gloves; the cutting of 10,000 is a good day's work. The heads are spread upon scaffolds, frequently stirred and turned to promote drying,

and assorted into three sizes. "Kings" are the largest, which grow upon the main stem; these are stiff and coarse.—"Middlings" are the next in size, and grow on the ends of the branches; these are the most valuable. "Buttons" are the smallest, and are used for very fine cloths.

Before the Teazles can be used, the "spurs" which are the stiff involucre segments seen at the base of the head in fig. 2, must be clipped off, leaving the heads as seen in fig. 3. This can be done by women and boys on the farm, and makes a difference in market of 25 cents per thousand. The price now is \$2 to \$2.75 per thousand, and they are marketed in boxes, made of $\frac{1}{2}$ boards, about 3 ft. 4 in. square by 6 ft. long.

The culture of Teazles is by no means so precarious in this country as it is in England, where damp weather in August fills the heads with water and causes them to rot before they mature. We are inclined to think that they might be made a very profitable article of export, for our season is generally very dry, just when theirs is most hazardous to this crop. We now import a great many, chiefly from France, and these being better grown and better assorted than American Teazles generally are, are preferred by manufacturers. We make the following extracts on this subject from a letter to the *American Agriculturist* from Mr. Chester Moses, an experienced cultivator of teazles in Onondaga County, New York:

"There is but little advantage in transplanting later than August, for the roots will not get strength to stand the winter. Rank manure makes teazles spongy and weak in the hooks. One man can tend four to eight acres the first

and a good hoeing in May, is all the care the crop requires before cutting. In cutting it requires two or three men to one acre. The heads should be cut as soon as the blossoms are off, a small section being left for one or two weeks, for seed, but the teazles suffer by remaining on the stalks after the blossoms fall. The seed makes good feed for sheep, but is so bitter that it needs to be fed with corn or oats, until the sheep relish it. Teazles should not be planted year after year on the same ground. The crop is profitable, quite so, when the price per thousand is equal to the price of wheat per bushel. Our average product is about 150,000 to an acre. The producers sold the crop of 1864 at \$5 per thousand, and that of 1865 at \$2 per thousand, the teazles being unclipped."



Fig. 3.—A BUTTON."

Several Plans for Destroying the Barn Weevil.

Our jocose suggestion of an expedition and certain cure for this pest, together with a sober call for information how to do the work less expensively, (p. 50, Feb. *Agriculturist*), has brought us in a fine array of testimony. This insect is a beetle, belonging to a family of the curculios or weevil, (*curculionidae*). Its Latin name is *Culandra granaria*, which means barn or granary weevil, and it is never found except where grain is stored. Wheat, rye and corn are com-

monly attacked by it, and some times oats, although it is thought, upon what

evidence we know not, that it will live in other seeds if they are large enough. This is, probably, a mere supposition, founded upon the fact that they are sometimes very hard to starve out. The grain weevil is nearly one-sixth of an inch long, and of the proportions shown in the accompanying figure, though the size varies considerably. The color varies somewhat from dark reddish brown to nearly black. The snout-like proboscis is a marked feature, and placing the insect under a magnifying-glass, eighteen punctured furrows may be seen upon the wing covers, and scattered oval dots on the thorax. They are very active in their motions, and, when alarmed, quickly hide themselves, or if touched, "play possum"—feigning dead.

The female lays her eggs upon the surface of the kernels of grain, (not in holes made by her beak, as has been stated). When they hatch the little worms bore directly into the kernels, and there grow and undergo their transformations, the grain, meanwhile, becoming lighter and lighter until the perfect beetle emerges, leaving the kernel a mere shell. This takes six to eight weeks. In the winter time the

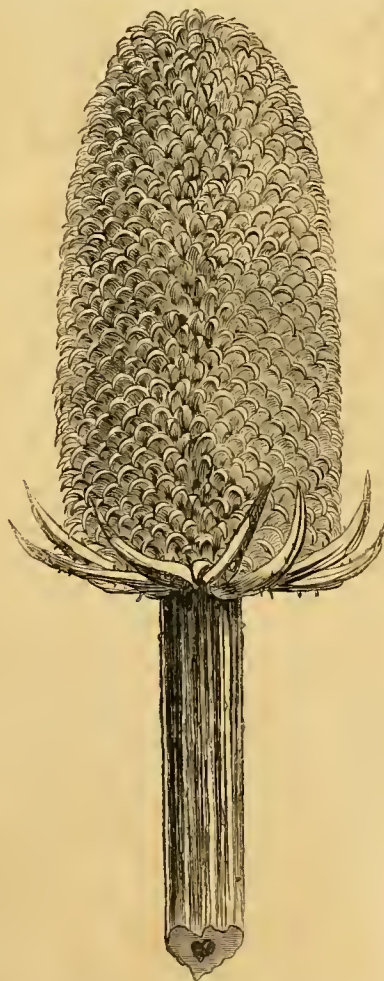


Fig. 2.—A "KING" TEAZLE.

year. The second year one thorough cultivating, or running through with a light plow, and



BARN WEEVIL.

weevils hibernate, seeking the warmest cracks and corners they can find.

They are often so numerous in grain store-houses and ships as to blacken the walls and grain heaps, and of course detract greatly from the value of grain. Vessels so infested are used a few trips in the salt trade, or the weevils are otherwise starved out. In elevators and granaries, after thoroughly cleansing the buildings, quick lime, finely slacked to a dry powder, is scattered about everywhere, brushed into cracks and corners, etc., and so a riddance is often effected. In barns, the afflicted say, it is much more difficult to clear them out.

Our correspondents suggest three systems for getting rid of the weevil. *First, starvation.*—The barn of D. Steck, Lycoming Co., Pa., was exceedingly full of them. "Keeping all grain out of the barn for one year" effected a perfect cure. . . . G. L. Hale, Franklin Co., Pa., reports that persons in his neighborhood who were troubled, put up sheds, under which to stack their grain, a few hundred yards from their barns, and after keeping the grain out of the barns for two or three years "they would be pestered very little with them." . . . Artemus J. Gridley, Hartford Co., Conn., "being greatly troubled, cleared his barn not only of grain but of every particle of straw, and put no grain nor straw in it for two years;—the cure was complete. . . . A neighbor of Joseph Huston, Monroe Co., Iowa, rid his barn entirely of the weevils, which were very thick, by erecting scaffolds, four or five feet above the ground, in his barn, storing the grain upon these and keeping his sheep beneath.

The *second* plan advocated is the use of salt or lime, or both. J. G. Coles, Camden Co., N. J., writes, "my plan is simply to put hay (green enough to dissolve salt) in the barn first, and salt it well. It will kill or banish certain. I filled my mows nearly half full of hay and stored the grain on top." He suggests, also, stacking the grain one year and filling the barn with salted hay. . . . T. Cole, Fairfield Co., Ohio, says: "before mowing away your grain dust finely slaked lime throughout the barn, on the sides and bottoms of the mows, and sprinkle a small quantity over every layer of grain of a foot in thickness, as it is mowed away. At threshing time sprinkle lime about the granary in the same way, and, if thought best, sprinkle a small quantity over the wheat pile as it fills up. A bushel of lime would be enough for granary and mows holding 500 bushels." . . . Thomas C. Mount, Monmouth Co., N. J., says: "In July, 1864, my barn being empty of grain, but occupied by millions of weevils, I took a bucketful of salt and sowed it in the barn broadcast, in every nook and corner which had bad grain in it. Ever since threshing time last year I have had grain in the barn but not one weevil has been seen." . . . J. C. Rinehart, Carroll Co., Md., leaves some chaff, etc., upon the floors until near haying time, then, on a rainy day, sweeps all out as clean as possible, turning over loose boards, etc. Then, when he gets his grain in, mixes two parts air slaked lime and one part fine salt, and sows one pint on each load of grain. Thus he gets rid of them.

The *third* plan proposed was carried out by Austin Rowe, of Patchogue, L. I. His barn was infested with the weevil, so he cleared it out and swept it; then taking some bags he went to the woods and found some large ant hills. With these he filled his bags—five bushels in all, sand, ants, etc., and taking them to his barn poured them out on the floor. The

ants immediately set to work devouring the weevils, and in a week's time all were gone and he has seen none since. The grain in the sheaf was not removed from the barn. Other farmers have tried this plan with the same result. The ants do no harm, but, after doing their work, depart into the earth.

Comparative Industry of Black and Italian Bees.

There is one lesson to be learned in bee culture that ought to be known to every one; neither the queen nor the majority govern, but every working bee acts under this law, "whatsoever I find to do that do." Such is the condition of a prosperous colony that where there is honey to gather and a place to store it, they work incessantly until they expire—building comb at night to contain the honey gathered during the day.

By weighing a new swarm morning and evening, for 20 days, we found they consumed at night about one-third of that collected during the day. But, alas, how great is their mortality. Late in the season, July 1, we selected ten similar empty frame hives and weighed each, and filled each with empty worker comb, and after again weighing gave each a new swarm of black bees, containing no drones. We then removed five of the black queens and gave five other young straw colored Italian queens. We also removed the five other *old* black queens, and substituted new ones. July 15 we examined each, and found the Italians had filled all their nine combs with sealed blood, while the black queens had only five full combs each; from the 20th to the 25th, the young bees emerged in great numbers from the Italianized hives, the young Italians outnumbering the old black bees, and by the 10th of August, less than six weeks, scarcely one hundred black bees remained; nearly all had become Italian save a few old ragged winged ones. During their conversion into Italian bees, the temper of the stocks gradually changed, becoming more mild, making smoke and a bee dress unnecessary in handling them. Careful handling does not disturb their labors. Even the queen continues laying, though removed on a comb and carried away. (The queen is really the greatest laborer in the hive). As a general rule, black bees, particularly those containing young queens, if you give them plenty of room, will not swarm; but two of the Italian hives swarmed once, and one twice, the second swarm issuing thirteen days after the first; hence the stock must have been without a queen during that time. Indeed, Italians work as well without a queen as with. We removed the queens and brood from two new swarms, and they filled their hives with sixty-one pounds of honey in twenty-four days, losing more than one-half their number during that time. Until the middle of August the bees experienced no destructive cold winds nor sudden showers, and flew less than one-half a mile, gathering buckwheat honey principally. Then the golden rod commenced blooming, which was occupied by black bees, gathering honey and building combs as yellow as gold; while the Italians passed over and flew nearly a mile beyond, gathering thistle honey almost as colorless as water. It will be observed, in the annexed tabular statement, that while the bees were engaged in raising brood they gained little or no honey—merely the weight of the young bees. Most crops of flowers bloom in less time than brood matures, so, unless other flowers fol-

low, the accumulated strength of the stock is wasted. Here lies the only secret to successful bee keeping: Keep your bees at work during any periods of short forage.

STOCKS WITH YOUNG BLACK QUEENS.

	WEIGHT, JULY 1ST,		GAIN IN POUNDS TO						Total gain in pounds.
	Of Hives	Of Bees	July 15,	Aug. 1,	Aug. 15,	Sept. 1,	Sept. 15,		
No. 1.	23½ lbs.	7½ lbs.	9½	12	41½	35½	23½	132½	
No. 2.	2.30 lbs.	8½ lbs.	10½	14½	42	46½	26½	140½	
No. 3.	3.30 lbs.	5½ lbs.	5½	13	21½	29½	9½	78½	
No. 4.	3.33 lbs.	6½ lbs.	11	21	37	29½	9½	107½	
No. 5.	5.23 lbs.	9 lbs.	7½	17	29½	27	16½	97½	
TOTAL GAIN WITH BLACK QUEENS									547 lbs.

BLACK BEES WITH YOUNG ITALIAN QUEENS.

	WEIGHT, JULY 1ST,		GAIN IN POUNDS TO						Total gain in pounds.
	Of Hives	Of Bees	July 15,	Aug. 1,	Aug. 15,	Sept. 1,	Sept. 15,		
No. 1.	29½ lbs.	6½ lbs.	11	21	49½	55½	49	189½	
No. 2.	30 lbs.	7½ lbs.	10½	18½	41½	75½	30½	181	
No. 3.	29 lbs.	5½ lbs.	4½	12½	37½	20½	41½	121½	
No. 4.	21½ lbs.	8½ lbs.	6½	10	59½	32½	38½	147	
No. 5.	31½ lbs.	6 lbs.	11	14½	39½	24	14½	103½	
SWARMS THROWN OFF:									
No. 6.	32½ lbs.	7½ lbs.	Aug. 10, from 5	6	45½	23½	75½		
No. 7.	21½ lbs.	8 lbs.	Aug. 12, from 4	14½	53½	18	86		
No. 8.	14½ lbs.	6 lbs.	Aug. 23, from 4	...	34½	21½	56½		
No. 9.	15½ lbs.	6½ lbs.	Aug. 28, from 3	55½	55½		
TOTAL GAIN WITH ITALIAN QUEENS.....								1025 lbs.	

As 5,376 black bees are calculated to weigh one pound, allowing six weeks as their length of life, it requires the lives of 278,476 black bees to gather 547 pounds of honey, or 509 bees to each pound gained. Taking the issues of the Italian queens, which were composed wholly of Italian bees, and allowing 5,123 bees to the pound and eight weeks as the length of their life, it requires only 249 Italian bees to gather a pound of honey—less than one-half the number of the black bees.

BIDWELL BROS.

October 6, 1865.

Broom Corn Culture.

The culture of broom corn is usually conducted with profit, and attended by no greater difficulties, if so great, as that of maize. The remarks made in other articles in this number, with reference to the preparation of the soil for Indian corn, manuring, etc., are equally applicable to this crop. With regard to seed, it is a question we cannot decide as to which is best, the tall or the dwarf variety. The testimony indicates that when the very best dwarf seed can be obtained, the crop is superior to the tall, (easier to handle and the brush finer and quite as elastic and valuable.) Yet there are many persons who have been greatly disappointed in changing from the tall to the dwarf kind.

Land which is very grassy should be avoided, for almost any weeds are preferable to grass, with this crop; and localities visited early by the frosts of autumn are most undesirable, as the earliest varieties are not secure from injury by frost, even in favorable localities. After plowing, harrow and bush the ground smooth, or roll it. Plant with a seed drill in rows three feet apart, dropping the seeds on an average two inches apart, depositing some fertilizer in the drill with the seed. Superphosphate mingled with an equal quantity of gypsum, at the rate of 300 pounds to the acre, has done well. A good drill will sow both seed and fertilizer. May 20th to the 1st of June is a good time to plant broom corn in this latitude, for it will not grow much until the weather is hot. Cover very lightly. Just after what is called "corn-planting time" is a safe rule, though in our practice we are inclined to delay this, so that it would be a little late for the broom corn. Cold, wet weather and frosts are more injurious to broom corn than to maize. After it is up a liberal surface dressing of ashes upon the hills or rows is often an excellent application.

Early Planting of Corn—Preparation.

In the Northern States, May is often a cold, wet, rainy month, and corn planted early, either does not come up at all, or it drags out a poor, yellowish, dwindling life, until the warm weather of June, while the farmer has to wage a steady battle with the weeds in order to see his corn rows at all. This is often the case at least, and we very much prefer to do other work in the early part of the month, meanwhile keeping the ground open by occasional harrowings, so that perhaps, two or three crops of weeds, will start up and be killed before the 20th or 25th, at which time we prefer to put in the main crop. An early maturing kind is best, and this cannot be too much insisted on both at the East and West; and we prefer not to go far out of the neighborhood for it, if we have not enough of such seed as we want of our own raising.

Take perfect ears with small cobs, and well filled out. Use only the perfect kernels. If the ear is perfect and thoroughly ripe, all the kernels may be used; but if the ear is misshapen and the kernels at the tip not so ripe and hard as the rest, plant only from the middle of the ear. Soak the corn twelve hours, then change the water, adding that which is as hot as one can bear his hand in. To this add a little *pine* tar, and stir the whole until the corn is all thinly coated with tar. Pour off the water and roll the corn in slaked lime. Plant within twelve hours, covering only about half an inch deep.

Grass Land, How to Improve It.

If you ask this question of many farmers, the only reply will be, break up and sod down afresh. Others will hesitate before giving this uniform answer. They will insist on looking at the land first, or at least will wish to know what is the matter with the present grass crop. Is some part of the field mossy or boggy? or does it grow certain coarse grasses which indicate undue moisture at the bottom? If so, their eyes will be opened, and they will reply, in medical language, that "underdraining is indicated." Nothing does the land need so much as this; nothing will do it material good, until this is first attended to. Plowing and manuring will be nearly all useless, so long as the land is clogged with surface water.

If this is not the trouble, they will enquire whether foul weeds have got possession, to the exclusion of wholesome grasses. If not, but the trouble is simply an impoverishment of the surface by long cropping, they will advise to scarify the sward in the fall with a heavy harrow, tearing up the mosses, and disturbing the soil a little, so that it will receive fresh seed. Then they will sow from 10 to 15 quarts per acre of clear Timothy and Red Top in equal parts, and cover the same with a light harrow. We should have said, too, they will apply a good coat of old manure, before the seed sowing. In this way repeating the manuring once in two years, many a meadow or pasture can be brought up to a high state of productivity. If, however, the land is infested with white daisy, dock, or thistle, the only way will be to break it up thoroughly, cultivate it five years with crops and grain, and finally seed down again. Manuring should go along with this cultivation, of course. When seeding down, be not sparing of seed, but use half a bushel of Timothy and the same of Red Top. If Red Clover is desired, it should not generally be sowed until in the spring, as it is apt to winter-

kill. If our farmer is a progressive man, perhaps he will enquire whether the grass crop could not be improved by irrigation. We believe that much is to be realized from this practice during the next generation.

New Enterprise—Don't Sell Peat Swamps.

There is at present a growing interest being awakened among scientific and practical men, that may prove advantageous to many farmers. Owing to the speedy decrease of our woodlands, and the heavy expense attending the carriage of coal from distant points to the place of consumption, many parties have been trying to discover a substitute for those articles as a fuel. Their attention was directed to Peat, which is so well known as a fuel in Ireland. The great objection to its use was the expense of working it into a suitable form. The people of Europe who use it, cut it in square cakes, like large bricks, setting it up in piles to dry in the sun. This makes a great deal of handling, and in this country would be too expensive in practice. The attention of inventors was directed to the getting up of a machine that would compress the crude peat into a dry, dense, and easily transported shape.—Five or six machines have been recently patented for the purpose, some of which are worked by horse power, and some by steam. It is not my purpose to draw comparisons between these machines, nor to particularize them. But I wish to call the attention of farmers to the fact that many of them have valuable beds of peat on their farms, and that speculators are now engaged in buying up available property of this description. They try to obtain the beds, on various pretexts, for as little as ten dollars per acre, and have sometimes succeeded. Others have given more, and they should all pay good large prices. I will relate a few instances of the speculation. One party, in Northern New York, has been offered \$400 per acre for a fine bed. One, in New Jersey, was offered \$25,000 for a bed of 28 acres—but, knowing its value, the owner refused.

That the reader may understand the *value* of this property, let me state the particulars given by a member of a company owning one of the best machines. He says an acre of peat, if ten feet deep, will yield 5,000 tons of fuel. The cost of manufacture is less than three dollars per ton. It will sell at \$6 to \$8 per ton, leaving a nice little profit of from \$15,000 to \$25,000 per acre. Eighty to ninety tons can be made by one steam engine, and ten or twelve men, per day.

There is one company, recently started in an adjoining county, that, instead of buying the bed, have bought the peat at ten cents a cart load. Three cart loads make a ton of the pressed fuel. Therefore, at these figures, they are paying at the rate of \$1,500 per acre.

It may be said that this fuel will not bring such prices. It does certainly do so, and will doubtless compete very seriously with coal. Before the Society of Arts, a Mr. Newton stated that peat, "if properly used, gave a calorific power greater than coal; but the use of peat in manufactures was of greater importance than simply as a fuel for heating purposes. Every iron manufacturer knew that if he could get peat to stand the blast, it was infinitely superior to coal for their purpose, for the simple reason that it contained no sulphur. They could produce iron by peat, from the worst brands, which would almost equal the best Swedish or Russia iron, simply owing to the absence of these deteriorating chemical agents which exist in coal."

Mr. P. F. Murray read, before the Society of

Engineers, at Exeter Hall, a paper relating to this subject, and stated that "at an assumed average of twelve feet, an acre would produce about 3,500 tons of dried peat." This is by the wasteful method of sun drying in vogue there. "Trial of condensed peat has been made by Mr. B. Fothergill, on a river steamboat, in which 12 cwt. were consumed in 2 hours and 20 minutes, the ordinary consumption of coal being 12 cwt. an hour. It saves half the time of getting up steam, and will do double duty as compared with coal. The absence of smoke and clinkers, and the preservation of the grates and fire-boxes from the effects of sulphur are important additional advantages."

According to the Syracuse Journal, a trial was made on the New York Central Railroad, a short time since, of peat as fuel for locomotives. "The usual amount of fuel consumed by coal burning engines being a ton to every twenty miles, but, on the trial, it only took half a ton of peat fuel to run engine No. 106 twenty miles."

Gas has been obtained from peat, in some respects superior to, and nearly as much in quantity as that produced from coal, oil or resin.

Dr. R.—, residing near Syracuse, estimates that fifteen acres, at an average depth of eight feet, will produce 40,836 cords. One cord is worth at least a cord and a half of hard wood—that will make it equal to 54,448 cords of hard wood to the acre. Estimating wood at \$6 per cord, and allowing two-thirds as cost for producing, there will remain a net profit of \$108,896 as the produce of fifteen acres of peat.

Now, brother farmers, you can see for yourselves what an immense enterprise this is. The writer was called upon by parties desiring to purchase his "muck swamp," under the pretense of cultivating cranberries. He, however, succeeded in drawing forth from one of them a slight hint on the subject, and, following out this hint, he has made investigations that have resulted in the above. Feeling it a duty to his fellow workers to let them also "into the secret," he has chosen the columns of the *American Agriculturist* as being the best vehicle for carrying this information to those whom it ought to benefit in preference to the speculators.

FIELD.

Oil the Harness

And have it repaired if necessary, before a drier season sets in. Wash it thoroughly with warm soft water and castile soap, and brush out every particle of dirt before putting on the oil. This is the important point. Better not oil at all than to apply it on dirty leather. The harness should be taken apart and the pieces washed and oiled separately. Rub on the oil while the leather is softened with the water. It can be applied at once if the leather is rubbed a little with a dry cloth. It should be soft, but not too wet. After applying the oil hang up to dry for a few hours, till the oil is absorbed. Old harness, that has been neglected, and is dry and hard, had better not be oiled. It will do no good. The evil is already done. The fibres of the leather have lost more or less of their tenacity, and oil will not restore it. In fact, by softening the leather it only weakens it—just as a wet sheet of paper will tear more easily than a dry one. Oil does not add to the strength of leather; it merely softens it and keeps it from cracking. It is a preventive of decay—not a restorer. Harnesses are now so high that it is more than ever important to take good care of them. Never let them suffer for want of oil; kept in good repair, they will last as long again.

The Groesbeck Barn Plans.

We present herewith the third and last of the prize plans. This too has its merits and its faults—and besides having many excellences in common with the one last published (p. 134, April), it fills some important deficiencies noticed in that plan, while lacking some meritorious points of that and the first prize plan (page 96, March.)

In most barns where the flooring above the stock is of loose boards, or only a floor of rails, the objections to the fodder being stored above the cattle stalls, are perfectly valid—but where the floors of the hay mows are made of matched stuff, the breath and exhalations from the animals can not come in contact with the fodder, and so, with fair ventilation,

there can be no injury to it from this cause. It becomes then a matter of some doubt, whether the cheaper construction, which the cattle wings, built as in this plan, admit of, is any real advantage, in connection with the loss of room above the stock. Storage space, for both fodder and litter for bedding, would indeed require more expensive and stronger buildings. It would, however, add considerably to the comfort of the cattle, by making the stables warmer in winter and cooler in summer. In every barn there ought to be straw shoots and hay shoots separate, as this will save steps, if straw is used for litter. We strongly object to manure under the stock and having it half under them is just as bad. A few years ago there was a general advocacy of barn cellars for manure. We will not say that manure *can* not be kept in a barn cellar under the stock, in a way to be perfectly harmless, in a sanitary view; but we must say that it *will* not be. In this plan, however, the only place to keep manure under cover is the cellar, and there is no adequate provision made for all that

the stock might make. The open yard is no place for it; so sheds away from the barn would be needed. This is very well, for a capacious shed with a bottom well constructed, is as good a place as can possibly be to preserve and make manure. The profit of farming throughout the Eastern States, and westward, to and almost throughout Ohio, may be measured, other things being equal, by the quantity of good

manure made. Hence, in our own view, there is no one thing of greater importance than convenient and abundant facilities for making manure. To this we would make many other things bend, if necessary. The prime thing in good farming is, good manure and plenty of it.

When cattle stand upon a floor over a basement or cellar, there is a constant dripping, more or less, especially after the buildings have been

plans. The construction of the wings may be plainly seen by reference to the section in fig. 2.

Design for Farm Buildings.

SUBMITTED BY E. BOYDEN & SON, ARCHITECTS, NO. 14 CENTRAL EXCHANGE, WORCESTER, MASS.

Having in the course of a professional experience of many years, been called upon to furnish designs for barns to suit a variety of localities, and to answer the requirements and tastes

of many different minds, we have embodied our ideas on the subject in the accompanying sketches. Of course we labor under the great disadvantage of not knowing the locality in which the barn is to be erected, whether in New England, the far West, or in the immediate vicinity of New York City. We have therefore embodied some favorite ideas of

our own, suitable to any ordinary locality. One very important principle is the entire separation of the stock from the store of food. We deem it as essential for animal health as for human health, that the food should be pure and wholesome; and we do not believe it possible to keep it so, if, as is usual, the cattle are kept underneath the hay scaffolds, with a tight, warm barn cellar below, for it will be impossible to prevent the ammonia from rising up through the barn and affecting the hay. Ventilation

will do something toward diminishing the evil, but ventilation has never yet been made perfect, and even when used, the gases are usually allowed to pass up through or come in contact with the fodder on the way to the point of exit. Let any one go in the morning from the open air to a good warm barn where stock have been kept over night, and with even good ventilators on the building, they will detect a strong odor both of ammonia and exhalations from the body, which can not be of any benefit to the food stored above or in the same build-

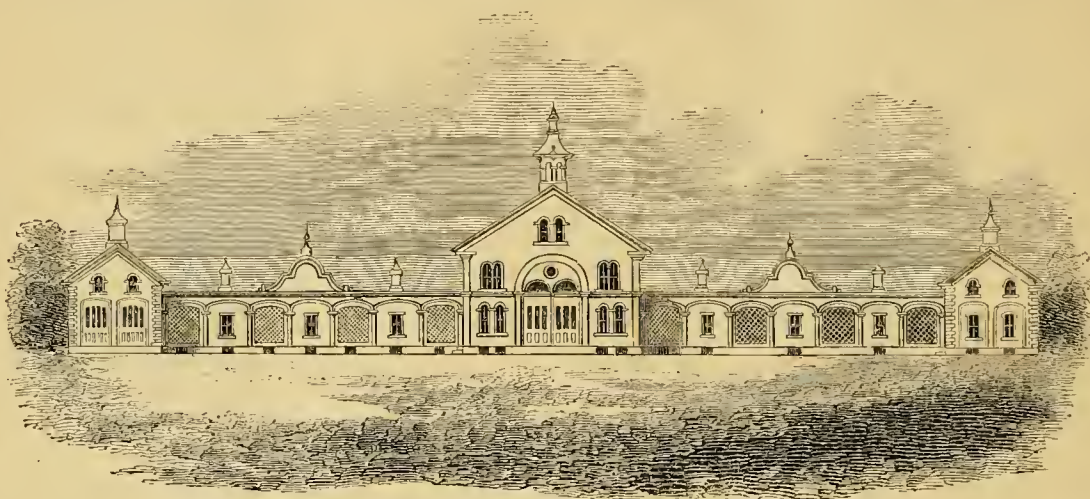


Fig. 1.—ELEVATION OF BARN, FACING NORTH.

in use a year or two. The liquids soak into the wooden gutters, no matter how well tarred, or cemented, finding their way by capillary attraction over and through obstructions, and are ever oozing and dripping down upon whatever is below. No stock ought ever to be kept under the stables of others, nor in the close vicinity of manure. Hogs are the only exception to this rule, and the less we discuss where they find their food and make their beds, the better for our appetites, if we eat much pork.

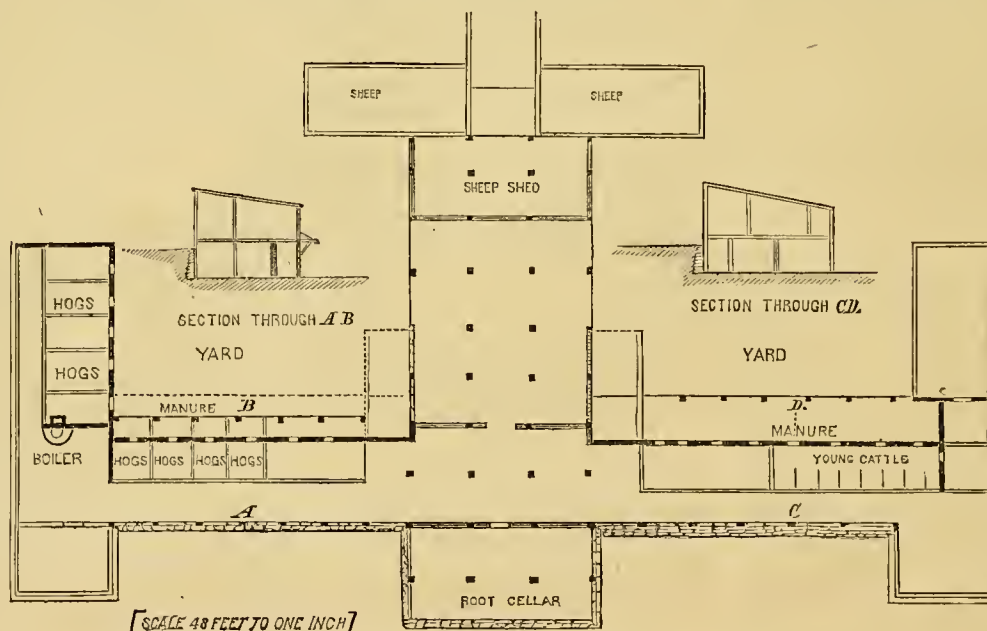


Fig. 2.—PLAN OF CELLAR.

The general arrangements of this plan are good.—The extensive root cellar, cart and tool shelters, most commendable,—the provision for shutting off the wings entirely from the main building, a great security in case of fire, and so there are many good points which will commend themselves to our readers. The yard-room is abundant, sunny, and sheltered from winds, the sheep yards being represented on the

ing. Any man of ordinary intelligence would not think of keeping his own food, for the season, in the apartment where he sleeps, and why should he keep his cattle's food in a place as unwholesome as that would be for his own.

In our design we have made the *Main Barn* for the hay and grain. This we have calculated to be large enough to hold 100 tons of hay, and the framing we would so construct as to be well

adapted for the use of the 'Horse fork.' For size and general arrangement see plans. This might be enlarged or reduced, and much expense saved by enclosing it with boards only laid edge to edge instead of being jointed and matched, as is usual, and necessary to make the barn tight and warm enough for cattle in winter.

THE CATTLE STABLES we design for low one story buildings made tight and warm, with good ventilation as is shown on the elevation. We would so construct them that the hay may be placed upon a truck and passed through the feeding corridors before the cattle, with ease. One space next to the main barn on each side we leave open for a passage through to the yards in the rear. The roofs may be made low and flat, or raised sufficient to slate or shingle as may best suit the locality. We propose to have every other one of the arches in front, open with sliding doors, if need be, for a part of the season, and to draw an open lattice work over the opening as is represented in the elevation. The cow stables we make wide enough to place the calf pens in the rear of the cow stables as represented on the plan. For young cattle we propose two arrangements: one, to place them in a wing back from the cow stables and on the same floor, and the other, to put them in a basement under the cows as is represented on the cellar and basement plan. In case they are placed in the basement, then the wing may be left off, or it may be used as a cart shed. The oxen are placed in the left wing that they may, if need be, have a separate yard from the cows.

A *Carpenter or Repair Shop* is shown at the end of, and in front of cow stables. The *Farming Tools* we would place in a room in front of main barn, and we propose to use a part of the cellar or basement under the rear of the main barn for cart sheds. The *Grain room* on the right, corn cribs in a room over these two, as shown on second floor plan of the barn.

THE HORSE BARN and *Carriage Room*, we think will not need other explanation than is shown by plans. We have provided for a *Harness room* and *Hostler's room*; and adjoining this, we design our *Poultry House*, with yard in the rear. The *Swine* we propose to place in the basement under this wing, as shown on basement plan, providing a set kettle for cooking their food. The *Vegetable cellar* we place under the front part of main barn.

THE SHEEP BARN we propose to place in the rear of the main barn, with low shed-building one story high, with the roof so constructed that it may be entered from the main barn, and hay dropped down the racks.

In the construction of our low buildings we claim that they may be built with much lighter timber above the floors, such as scantling frames, and consequently may be constructed more

cheaply than may at first appear from the extent of the building. We claim some consideration in favor of this plan, as in case of fire, by closing the sliding doors, separating the main barn from the stables, the fire might be kept back until the stock could be removed.

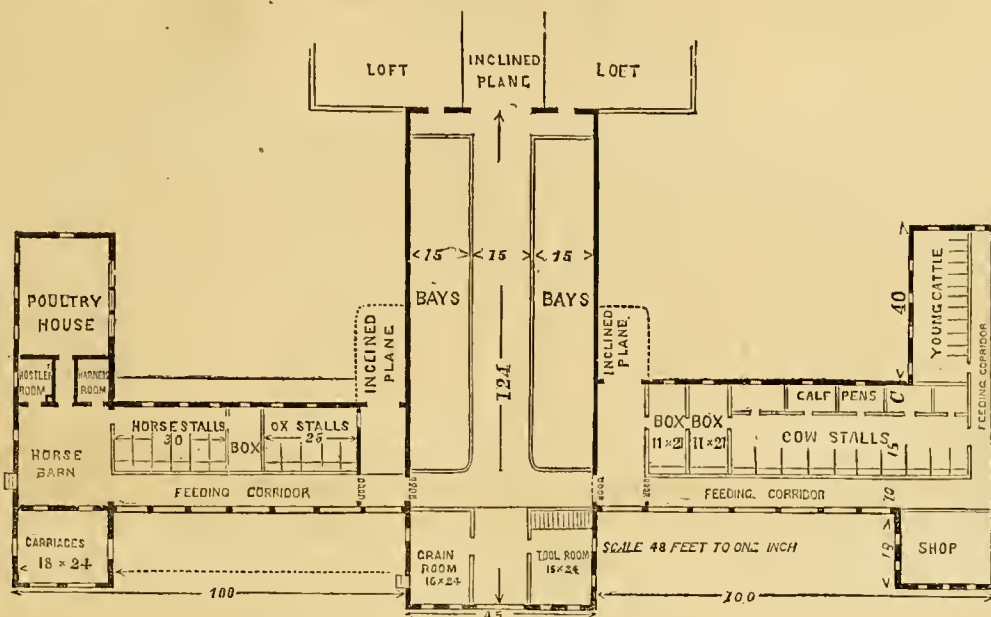


Fig. 3.—PLAN OF PRINCIPAL FLOOR.

For the American Agriculturist.

A Plea for the Alderney.

BY A. W. F., OF BERGEN CO., N. J.

Not the plea, Mr. Editor, of the fane farmer for his pet, without regard to actual merit, but I would present the claims of a breed of cattle whose true position is not properly recognized in this section of the country. In choosing stock we should have regard to the uses and purposes for which we need them. If we would breed for the shambles, there are probably no cattle that can compare with the Shorthorn; but if we would breed for the pail, we must look elsewhere, we must either establish a blood in which the milking property predominates by a succession of generations and the use of the arts of the skilled breeder, or select from some established breed possessing this trait, and perpetuate it by judicious breeding with reference to this end. You cannot expect to represent in



Fig. 4. LOFT OF MAIN FLOOR

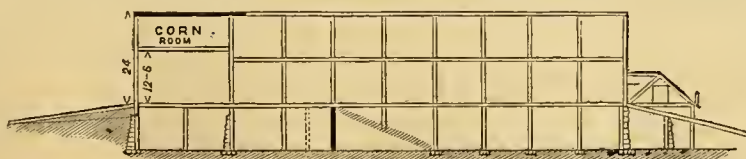


Fig. 5.—SECTION THROUGH MAIN BARN.

the same blood the good milker and the great beef-producer. The history of the Shorthorns illustrates this. The Teeswater cattle, from which the Shorthorns are said to have sprung, were angular in shape, and make good milkers,

yet by breeding with a view to beef-producing points, the great milking property has been lost, inasmuch that it is rare at this day to find a milker among them; some families of them, it is said, show the old milking characteristic more than others, and a cross with a good native has

occasionally developed this trait in a marked degree, but, of course, without any security of transmitting it to the progeny. Now, I think you will agree with me, that within striking distance of the great markets, say within two hundred miles of New York, it will not pay for farmers to breed principally for beef purposes. Within the section named, butter commands too good a market to justify us in wasting our forces competing with the great West in raising beef. Butter and milk are the products from cattle that we who

live near cities are most interested in. For this purpose, and the general uses of the farm, I hold the Alderney is the stock we should keep. I claim for the Alderneys, good size, a fair yield of milk, and that of exceeding richness.

Unless my observations and experience have been exceptional, the reproach of "little Alderney" is undeserved. The opinion that the pure breed is one of dwarfs, is a mistaken one, that is, so far as the stock has been developed in this country. Careless selections have doubtless been made in many importations, while some importers may have thought it necessary to select the smallest specimens to gratify the existing prejudice; change of soil, climate, and good care, may have tended to develop growth of bone and muscle above that characteristic of them on their native isles; but the fact exists that the Alderneys that have come under my observation are of good size. My small herd contains one cow imported by Richardson, and others with pedigree as good, and all of good size; weight I cannot give, but the farmers in my neighborhood consider them good-sized cattle. I have seen a number in this State answering this description. My neighbor's imported bull, at four years of age weighed a few pounds short of twelve hundred (1200) pounds, his only feed being grass in summer, and clover hay in winter, without any grain. Those of this blood that I have seen, at least equal the Ayrshire in size. The Alderney gives a fair yield of milk, and carries a large flow for a long time. My imported cow, up to the time of my purchase, had been accustomed to go dry but a week or ten days. Of course I allow her more leeway now. The Alderney with her second calf, will give from twelve to twenty quarts daily, when fresh. My Alderney

heifer "Flora," with her first calf, now three weeks old, is giving twelve quarts. My imported cow "Nellie" gives, when fresh, from fifteen to sixteen quarts daily. There are doubtless deep milkers among them. I have seen an im-

ported Alderney whose bag indicated a capacity of from twenty-five to thirty quarts, and this opinion was shared by the owner, though he had never accurately measured the yield. Wm. Brooks has testified in a published affidavit, that during the summer of 1853, an imported Alderney, owned by Wm. C. Wilson, of Baltimore, in charge of Brooks, gave thirty-six (36) quarts a day for some time.

The milk of the Alderney is exceedingly rich. Five quarts of milk (on good feed), churned with the cream on it, will yield, I believe, a pound of butter.—My experiments in churning the milk with the cream have been very unsatisfactory. Bridget has never been able to seize the moment when the milk is in the proper condition for churning. "They never churned the milk in the old country, sure, only the crame." Hence I have been able to get more butter from the cream of the milk, than from the cream and milk churned together. My imported cow made a pound of butter from the cream of less than six quarts of milk, speaking accurately, from the cream of five quarts and fifteen-sixteenths of a quart; this in the latter part of November, upon the following feed: four lbs. of clover hay, and one peck of turnips in the morning; at noon, three pounds of cut cornstalks (in bulk one bushel), moistened and mixed with one and a-half pounds of wheat middlings—in the evening the same in substance and quantity as at noon. Last summer, an Alderney heifer with her first calf, then owned by me, while giving fourteen quarts of milk on ordinary pasture, made a pound of butter from the cream of six and a-half quarts of milk. I mention these, not as exceptional cases or to vaunt my cattle as superior to other Alderneys, but as the result of exact experiments made to satisfy my own mind of the truth or falsity of the stories current as to the remarkable butyaceous properties of Alderney milk. Let your readers try the experiment, and they will find that it is a good native cow, twelve quarts of whose milk will make a pound of butter. Zadock Pratt reports, as his first year's experience in the dairy, that it took twenty quarts to make a pound of butter. In the course of three or four years, by improving his herd and discovering the best kind and quantity of feed to give, and with the most complete appliances for making butter, together with the skill acquired by practice in the business, he was able to make a pound of butter from about eleven quarts of milk.

The opinion of all I meet who have this stock, sustains me in the conviction of their great superiority over all other cattle for the dairy. My estimate of their great merits amount almost to an enthusiasm, yet I have tried to make my pen yield strictly to facts. I have occupied more of your valuable space than I intended, and will close my letter with my opinion, expressed in brief, as derived from reading, observation, and experience, of the comparative merits of the three following breeds of cattle. If you would grow beef, breed the Shorthorns; if cheese or milk for the city market be the products you value most, the Ayrshire is the stock to keep, but if you would grace your table and the market with golden butter and secure a golden lining for your pocket, the deer-like Alderney steps forward and claims to be the cow *par excellence*, to fill the full measure of your desires.

LATE SOWN CLOVER.—It is commonly desirable to sow clover and grass seed as early as the ground can be prepared for them—but this need prevent no one from sowing in May—for in this

month the seed "catches" better, and on well prepared ground the plants get sufficiently well rooted to bear a good deal of scorching in June and July, and do better than with grain.

An Interesting Fact in Sheep Breeding.

AN INCREASE OF 400 PER CENT. PER ANNUM.

His Excellency, Senor Don D. J. Sarmiento, Minister of the Argentine Republic, widely known for his interest in the cause of Education, Arts and Agriculture, favors the readers of the *American Agriculturist* with a letter from his sister—the widow of a large land owner, whose estates lay in one of the interior Provinces of the Argentine Republic, S. A.—to whom he wrote for the facts concerning a remarkable flock of her late husband's. She responded as follows, under date San Juan, Nov. 9th, 1865:

* * * "1. There was a sheepfold of ewes in which all brought forth two lambs twice a year.

"2. My husband, Don Mareos Gomes, formed the flock in this manner: He bought a small flock of about twenty ewes, and with them one very old breeding ram. When they began to multiply, one or two had twins; the first male twin he destined for a breeder, and when he was serviceable, the old ram was killed; the ewes then began to bring forth various twin ewes. By this circumstance, he observed that it was because the ram was a twin, and he proposed to mark all the twin yearling ewes, and to set them aside for breeding, and every ewe that brought forth one lamb only was killed.

"3. There were many black ewes in the fold, and also white ones, though in less numbers, but both colors propagated themselves equally.

"4. At the end of four years, or less, not one of the original ewes of the fold remained. This being the case, he made another observation, namely, that among these twin ewes, (products of a twin ewe and of a twin ram), from time to time, some produced from one to three lambs, and that (in the case of having triplets,) they suckled two and discarded one, and it was necessary to bring in these deserted ones and raise them on cows' milk, till they were in a condition to turn loose in the flock.

"5. They continued bringing forth from one to two at each yearning, during ten or more years, and no tendency to return to the primitive type was noticed, care always being taken that all the breeding rams should be twins.

"6. The sheepfold lasted until the death of Don Mareos Gomes, for after his death they were killed or sold until the fold was exhausted.

"7. The flock numbering, perhaps, from 400 to 500 ewes, furnished meat for all the laborers, and he sold many lambs. They were not allowed to increase, because there were few pastures upon the estate."—In connection with these interesting statements, we can not forbear to enforce a parallel fact, viz.: That the bearing of twins is found inconsistent with the largest size of the sheep. Twins are, therefore, not regarded as desirable, by those who maintain any breed in perfection.

The application of the principle brought out in the flock of Don Mareos Gomes, which we would suggest, is, that for raising mutton sheep, or lambs, it would be well to employ twin ewes so far as practicable, and to use with them twin rams of some improved mutton breed, South Downs, Cotswolds, Leicesters, etc. Twin rams of these breeds, may, we think, often be bought at less prices than others, on account of their smaller size, and if it be found that they may be relied upon to produce a considerable num-

ber more of twins than other rams, it would pay to use them in breeding for the shambles.

A Bit of Chemical History.

The Working Farmer for February, contains a long obituary notice of the former editor and founder of that paper, Prof. J. J. Mapes. Of course the present editor has a right to hold the services to agriculture of his predecessor in whatever estimation he chooses, and as long as it is an opinion, we have no fault to find. But when history is completely ignored, and statements are made which have not a shadow of foundation, we think it due to the cause of truth, that these errors—to use the mildest term—should not be allowed to go out without some notice. The following will serve as a specimen of the looseness of statement by which this article is characterized: "He (Prof. Mapes) was the first man to make known that plants take up Carbonic acid from the atmosphere, and that ammonia is valuable only in assisting inorganic constituents to become more soluble in water. These facts were subsequently confirmed by the investigations of Liebig, the great agricultural chemist." That is history according to the Working Farmer; now let us see what other people have done. In 1754, Charles Bonnet published a work, the translated title of which reads, "Researches upon the uses of the leaves of plants, and upon some other subjects relative to the history of vegetation." In this work is found the first notice of the fact that air was emitted from the surface of leaves, and this air was afterward recognized by Priestly to be oxygen. In 1779, J. Ingenhouz, in a work called "Experiments upon Vegetables, discovering their great power of purifying common air in the sunshine, and of injuring it in the shade at night," showed that the presence of sunlight was necessary to the liberation of air from leaves. In 1783, J. Senebier, of Geneva, proved that the oxygen eliminated by the leaves came from the decomposition of Carbonic acid. All this took place in the last century, and these results were confirmed by the researches of De Saussure, published in 1804. As we learn from the same article that Prof. Mapes was born in 1806, we leave the Working Farmer to cypher out the age at which he must have made the discovery of the relation of plants to Carbonic acid. We dismiss the Working Farmer article with one more quotation: "A truth does not cease to be a truth after it appears in print," which would be applicable to some of its statements if it read: "an error does not become a truth, after it appears in print."

About Seasoned and Unseasoned Wood.

S. D. Newbro, of Ingham Co., Mich., writes to the *American Agriculturist* to the following effect: That by careful experiment, he finds green beech and maple wood cut in the winter, and kiln-dried, or thoroughly seasoned, to lose three-eighths of its original weight; that a cubic foot of either kind in the green state, weighs about 60 lbs. on an average, there being a difference between the butt end and top ends of a log, and some trees are closer and firmer grained than others; that a full cord of such green wood, weighs about 7,680 lbs., but if 1,680 lbs., i. e., a little over one-fifth, be deducted for the open spaces in wood as usually corded, it leaves 6000 lbs. as the weight of a cord of four-foot green wood, or 4500 lbs. for three-foot wood, or 2250 lbs. for 18-inch wood. Practically,

the experiments show that *five cords of green wood are as heavy as eight dried; that it requires as much physical force, man and horse power, to move 50 cords of green wood as 80 of dried wood,—and that the man who carries into his house 10 cords of four-foot green wood, carries in with it over 11 tons of water.* Sixty lbs. of green wood will warm a room the same as 38 lbs. of dried; and the 60 lbs. of green wood, while burning, discharges into the fire in the form of vapor just 23 lbs., or 2 gallons and 3 quarts of water, which, in changing to steam, carries off a great amount of heat in a latent, useless state.

Our Native Grapes.

BY F. C. BRAHM, WATERLOO, N. Y., (LAT. 42° 55' NORTH.)

[The following arrived too late for April, but we give it now, as embodying the valuable experience and opinions of one of our successful cultivators. Many will dissent from some of Mr. Brahm's views in regard to varieties, but it is only by comparing notes of cultivators in different parts of the country that we can reach any just conclusions as to the real status of varieties.—Eds.]

To the Editors of the American Agriculturist.

It has been a pet theory with some to enrich the soil with strong, stimulating manures before setting out the vines; also to go to a large expense in trenching and working the soil to a depth of three feet and more. This I have tried, and found to be worse than money thrown away, especially the heavy manuring, which resulted in positive damage to me. Isabella vines, which had always borne large crops of fair grapes that uniformly ripened, refused to do anything after being stimulated with strong manure, and I find that I am not the only one that has been misled by these theorists.

Stimulating the vines with strong manures, causes a rampant growth of wood, which hardly ever ripens, and is very liable to be winter-killed. The fruit does not set well, ripens very uneven, and not as early, by nearly two weeks, and is very liable to mildew and rot, especially if there is much rain in July and August.

Working the soil 20 inches, is deep enough for all practical purposes, especially in the Northern States. In countries where they have a hot climate and long Summers, without rain for long periods, like California, Spain, Italy and Portugal, this deep working is no doubt beneficial and necessary to protect the vine from intense heat and long droughts. But for our short Summers, where we have frequent rains, we want to keep the roots of the vine as near the surface as possible, and be out of the way of the cultivator and get the benefit of solar heat and light. Working 20 inches deep is about right, so far as my experience has shown. I use a clipper plow or strong sub-soil plow, having a sub-soil attachment behind that can be raised or lowered at pleasure, and by which you can loosen the sub-soil six inches below the point of the plow, and not throw it up on top. Take a furrow, from six to eight inches wide, and go twice in a furrow. If the soil is very stiff it should be cross plowed. It will require three span of horses or oxen to do it well, and if the soil is heavy and stiff, four span. Oxen are best, being steadier and less liable to break the plow in stiff soil. This method will break up and loosen the soil from eighteen to twenty-four inches, which is sufficient. Three yoke of oxen and two men can plow one acre per day unless the soil is too stiff.

The requisites for successful grape culture are, first, a favorable location, one exempt from late spring and early fall frosts, and a judicious selection of varieties, adapted to the locality.

Second, the soil should be thoroughly drained, (unless it be on a deep, gravelly soil, where there is a good natural drainage); the drains not less than three feet deep, nor more than twenty feet apart, nor should tile be used less than three inches wide—three-inch horse-shoe tile, laid on boards, make a very good drain. Vines planted on wet or springy soils are more liable to rot and mildew, and will not perfect their fruits so well nor ripen as early as vines planted on a dry, warm soil. We cannot get our soil too warm and dry, especially for this latitude. This is an important fact, and should be remembered by those about engaging in grape culture. Third, the soil should be neither too light nor too heavy. Any good, well drained soil, that will produce from 15 to 20 bushels of wheat per acre, is rich enough for our strong growing natives, especially Isabella, Catawba, Diana, etc. Delaware requires a richer soil, and is an exception to the general rule. Fourth, exposed lands, sloping to the south or southeast, are best, although land that is level is not by any means to be despised, provided, however, that it does not lay too low, in a basin or deep valley, as such locations are more subject to frosts and fogs. If possible get near a large body of water, as such location has shown the best results, near some of our numerous inland lakes for instance. Vineyards in their immediate vicinity seem to be exempt from spring frost and mildew.

If the wind blows strongest from the west make the rows east and west; if from the north or south, then make them north and south, so as to offer the least resistance to the wind.

ANNA, a white grape, seedling of Catawba. Bunch and berries medium size; good quality and high flavor, where it ripens. Too late for this latitude, may do well further South, or where Catawba ripens well. Hardy.

ALLEN'S HYBRID, a white grape. Hybrid, between a native and foreign grape, Isabella and Chasselas, I believe, originated with Mr. J. Fisk Allen, of Salem, Mass. This fine grape is, in my estimation, the best white grape I know of. Ripens with Delaware, or middle of September. Bunches large, shouldered and compact. Quality first best. Vine a little tender, and more suitable for the garden than vineyard, and should rank among the six best varieties.

ADIRONDAC, is an excellent early grape, ripening with Hartford Prolific and Israella, but too subject to mildew in some localities, to be of much value for general cultivation or vineyard planting, except in localities where it has been tried and found to succeed. Were it not for its liability to mildew and tenderness, it would be a desirable grape to plant for early marketing.

CONCORD, a black grape. This has been, and is still, with some, a popular grape, especially at the West, where it seems to do better than in the Northern States. Bunches and berries large and fine looking. Ripens about the 20th of September, or ten days before Isabella. Quality ordinary. It is foxy, tender skinned, and berries frequently crack open and drop off in shipping to market—sometimes on the vines. Rotted badly this season. It is now superseded by better sorts; would not advise planting largely of it. Vine hardy and productive.

CREVELING, a black grape of good quality. Ripens early, or about September 5. Bunches medium size. Does not set fruit well, bunches very loose, the only objection to it. Hardy.

DELAWARE, a red grape; one of our finest table grapes, ripening from 10th to 15th September. Quality first best. Very hardy and productive. Bunches and berries medium size, shouldered

and very compact. Should be planted on a rich, dry soil to do well. Its only faults are too great compactness of bunch, berries frequently bursting. Birds generally are very fond of them. Bees sting the berries and disfigure the bunches. It should have good cultivation.

DIANA, a red grape, seedling from Catawba. Bunches large, shouldered, compact. Ripens with Concord, or 20th September. Quality first best. Is a splendid keeper,—can be kept until Spring with less trouble, than any other grape I know of. It is a superior wine grape, and in my estimation better than Delaware, making a wine that commands the highest price, and superior to any Rhine or Hock wine. It should be planted on a light, dry, warm soil or sandy loam. Does poorly on heavy soils; should not be allowed to overbear when young. Productive and strong grower, as hardy as Isabella.

ELSINGER, a small black grape. Bunches large and somewhat loose. An excellent grape for table. Not suitable for vineyard planting on account of its small size. As hardy as Isabella. Ripens a few days before Isabella.

HARTFORD PROLIFIC.—Ripens early, or about Sept. 1. Very productive; hardy; quality poor; foxy; should be picked about three-fourths ripe, when it will bear shipment better and taste less foxy than when fully ripe. Not desirable where Israella and Creveling can be had.

ISABELLA, is now supplanted by earlier and better sorts. There are, however, localities where it can be successfully grown for market with profit. It does best on a gravelly soil of ordinary fertility. I have dug all mine up and planted earlier varieties.

IONA, a red grape. This splendid grape ripens same time as Delaware, or September 15th to 20th, sometimes earlier. Bunches and berries large. Quality first best. Some think it superior to Delaware, especially those who like the Catawba. It is tender and sweet to the center, having no toughness or pulp when ripe. Is a good keeper, and will no doubt be one of our best grapes for wine. For table it has no superior. Is productive, and, so far as I have tested it, hardy, having fruited it two years. I regarded it so highly that I planted two acres, and shall plant two acres more this spring.

ISRAELLA, a valuable acquisition to our early varieties, combining earliness with good quality, and very productive. It can be kept till spring with little trouble. Ripens about Sept. 1, or same time as Hartford Prolific. Bunches large, compact, shouldered. Quality good. Hardy, and will no doubt rank as our best early market grape when it becomes better known. Very desirable.

REBECCA.—Vine rather a shy bearer until it gets well established. Bunches medium size, compact. Quality best. Vine tender and liable to sun scald. Suitable for garden only. Ripens about one week before Isabella.

ROGERS' HYBRID, No. 19. Quality good. Productive. Ripens about Sept. 10th. Is a good keeper, hardy, and will no doubt prove to be a popular market grape.

ROGERS' HYBRID, No. 4, is very similar to No. 19, but not so early and not so well flavored. These two, I think, are the best of the lot of Mr. Rogers' hybrids, and deserve a fair trial.

TO KALON.—Bunches and berries large. Quality good. Strong grower. Sometimes rots badly. Requires a good warm soil of moderate richness. A desirable grape for garden. Ripens a little before Isabella. Moderately hardy.

UNION VILLAGE.—This grape, when well grown on established vines is the largest, showiest and most beautiful in appearance of all our native grapes, often producing clusters weigh-



GROUP OF PLANTS WITH ORNAMENTAL FOLIAGE. — Designed and Engraved for the American Agriculturist.

ing as high as one and one-half pounds. Bunches and berries very large. Ripens a little before Isabella. Quality ordinary, or like Isabella. Strong grower. Not very hardy. Should be laid down and covered in Winter, and, let me add here, that were all of our varieties laid down and covered in Autumn it would be found to well repay the cost and trouble of so doing. You thus ensure a crop of grapes for next year—no buds are frozen. They all start uniformly in the Spring, and the fruit will ripen a few days earlier. This has been my experience. I cover all my vines without regard to the variety.

SELECTION OF VARIETIES.—My experience with the above-mentioned varieties, and a large number of others not named in this article, that I have under cultivation is, were I to select six varieties for this locality, I should name Iona, Diana, Delaware, Israella, Rogers' Hybrid No. 19, and Allen's Hybrid. Iona, Diana and Delaware for wine and table; Israella and Rogers' Hybrid No. 19, for early marketing, and Allen's Hybrid as best white grape for table. Should I be confined to three varieties I would name Iona and Diana for wine, table and long keeping; and Israella for best early grape, of good quality, for table and long keeping.

Cultivators should bear in mind that it takes no more ground nor costs any more trouble

to cultivate good varieties than poor, worthless foxy trash, and should be careful in their selections, and plant only those of high quality, that have proved themselves hardy, productive and healthy, as fruit produced from such vines will always command an extra price and find ready sale, when poor, foxy kinds will drag in the market and bring a much less price. A few dollars extra cost in the purchasing of vines of good quality will be found money well invested, and better than to plant vines of inferior grades and quality at half price. It is better to pay a good, fair price for an Iona, Diana or Delaware, than to have a Hartford Prolific, or even Concord, given to you, as the one will make good wine, in case the market gets glutted, while the other will, if they cannot be sold, be a dead loss, or, even at best, make good vinegar. It is of the utmost importance, therefore, to plant only those varieties that, in case they are not sold, (which may occur at some time or other, judging from the immense quantities being planted), they can be made into a good article of merchantable wine, that will command a ready sale and put money into the pockets of its owners. A vineyard, if properly planted and taken care of, will last a lifetime. Therefore, make a good and judicious selection, as on this depends your profits.

The Decoration of Small Front Yards.

The *Agriculturist* has a large circle of readers whose landed possessions do not exceed one or two city lots, and we like occasionally to have an article especially for these. Most of them, whether living in city or village, have a small space between the house and the street, which they wish to turn to the best account, as it is constantly in view not only of passers by, but from the windows of the dwelling. Where the soil and situation are favorable, these little patches may be kept gay with flowers during the whole season, provided a reserve stock of plants be kept in pots in the back yard, ready to replace those which go out of bloom. We have seen these little flower gardens kept up very nicely; but more generally they promise well in spring, languish in summer, and by autumn are sad pictures of desolation. One who would keep a place of this kind looking well all the season, has to persevere against difficulties. The soil is usually poor and shallow, and the heat and dust are so destructive to flowers, that any but the most ardent enthusiasts are too apt to be discouraged and give up in despair.

Those who wish to give the front yards a comely look, and are unable to have a well kept flower bed, will be glad of some suggestions to

this end. A neat bit of close and well kept turf, is always pleasing, and upon this, one or more evergreen shrubs, according to the size of the spot, will be in good taste, and give a cheerful look summer and winter. But to have even this, the soil must be looked to. Often the rubbish left by the builders is just covered with soil, and the place fit for nothing but weeds. Among the shrubs suited for such places, the Norway Spruce and Arbor Vitæ are the most readily attainable, and they stand rough treatment better than most others. Though they are naturally trees, they may be kept as shrubs. Select those well furnished to the base with branches, and then keep them small and dense by the use of the knife. The Siberian, Golden, and other varieties of Arbor Vitæ, make beautiful specimens treated in this way. The Dwarf Pine, or some of the Junipers, may be planted with good effect. If the place is somewhat shaded, some of the broad-leaved Evergreen shrubs may be used. The Tree Box, Japan Euonymus, or even the Rhododendron, may be made to grow, though these are not recommended where the winters are severe. For such situations the French use plants with ornamental foliage to an extent of which we have no conception. Some of their florists publish especial catalogues of plants remarkable for the elegance of their leaves, which comprise many species that it would be difficult to obtain in this country. A group of these plants, with fine leaves, can be made to produce a pleasing effect, and there are enough readily obtainable at our florists, to allow those who wish, to make the attempt. Our artist has drawn a group of plants of this kind. The center of the bed is occupied by various species of Canna, around which is planted a row of *Caladium esculentum*, with its enormous leaves, and outside of this a border of *Centaurea candidissima*, with cut leaves, of a very pale, almost white, color. A group of this kind has a very tropical look. Roots of the Canna and Caladium, from which the foliage shoots up very rapidly, and plants of the Centaurea, are sold by the principal florists at moderate prices. The Canna will grow about six feet, the Caladium about two or three, and the other not more than a foot high.

A very brilliant planting can be made with *Coleus Verschaffeltii* in the center of the bed, with a border of Centaurea; the deep purple of the Coleus contrasting strongly with the Centaurea. The plants of Coleus may be put about a foot apart, and as they grow, shorten the branches to make a compact mass.

Those who can wait for annuals can use the finer varieties of the Castor Oil Plant, the Striped Japanese Corn, Perilla, and others.

Side-Saddle Flower.—(*Sarracenia purpurea*.)

The engraving represents a curious plant,—not an exotic that can only live in the atmosphere of the hot-house, but a hardy native of our own cold swamps. Though it is not rare,

tention, and when in flower is quite conspicuous, if not elegant, and there are many exotics grown in our hot-houses with great care, that are less wonderful and less interesting than this singular and rather common native plant. The leaves are all produced in a cluster frequently a

foot across, at the surface of the ground; the engraving, which so well shows their shape, gives them in a position more erect than the natural one. In the living plant they are filled with water, and rest on the ground with the mouth and wing-like portion uppermost. The beauty of the leaves is much increased by conspicuous purple veins. From the shape of the leaves and the fact that they contain water, the plant bears the names of Pitcher Plant, Huntsman's Cup, and Forefather's Cup, in some places. However these names may suggest the possible uses of the leaves, no one would be tempted to drink from them after seeing the number of dead insects, and oftentimes living larvæ, that they contain. The plant is one of those puzzles with which we sometimes meet, and it is difficult to see what purpose is served by the peculiar shape of its leaves. As it only grows in wet places, the plant apparently does not need the water contained in their cavities, and it is not easy to see of what use the insects can be to the plant; yet it seems to be made for the express purpose of trapping them, the lip-like portion of the leaf being furnished with stiff hairs pointing downward in a manner to effectually hinder an insect from crawling out. The flowers are produced singly upon stems, a foot or more high, and are nodding; they are of a dark reddish brown color. Their general form is shown in the engraving, but it would need a dissected drawing to describe their structure clearly. The calyx is darker than the corolla, and the parts of the



SIDE-SADDLE FLOWER

the plant is not often seen, as its places of growth, the peaty bogs and wet margins of ponds, are of a character not very tempting to others than botanists and anglers. Last sum-



Fig. 2.

mer we took a large specimen to a country hotel at which we were stopping, and found it to be an object of as great curiosity to the congregated villagers as a growing pineapple would have been, and though the plant grew in great abundance within a few miles of the place, no one appeared to have ever before seen it. The plant is at any time sufficiently striking to arrest at-

latter curve inward and cover a very large and umbrella-shaped stigma, two points of which are shown. The name, Side-Saddle flower, is said to be from the resemblance of the stigma in shape to an old-fashioned pillion. Breck, in his New Book of Flowers, states, that by taking the plants up with a ball of earth, they will grow if planted in a moist part of the garden. We have grown them in the house by merely setting the plant in a bowl or vase with moss, and keeping it thoroughly wet. Treated in this way it will flourish and make an attractive ornament to the sitting room. The genus was named in honor of Doct. Sarrazin, a French Physician, who first sent specimens from Canada to Europe. It contains several other species besides the present one. *Sarracenia flava* is common at the South, where it is popularly called Trumpets, a name suggested by its long, erect, trumpet-like leaves, which are sometimes

two or three feet long. This species is found as far north as Virginia, while *S. purpurea* grows all through the Northern States, and in cold places among the mountains, Southward.

Some time ago we saw in an English periodical some engravings showing how the leaves of the *Sarracenia* could be made useful in the arts of design. We had two of the subjects copied, and regret that we have forgotten the name of the artist, or we would give him credit for them. Figure 2 is an ingenious adaptation of the leaf in a design for a gravy boat. Fig. 3 shows how this form may be adapted to a vase, or by turning the lip outward, it might serve as a pitcher. If those who design patterns for furniture and utensils, as well as those who make figures for carpets and wall paper, would take a few hints from nature, we should be surrounded by more pleasing forms than at present.

Since the above was in type, we have seen in American journals, which ought to know better, an article from the English papers, giving an account of this plant as a specific cure for small pox.—This thing started in Nova Scotia several years ago, and we supposed it had died out. Suffice it to say that direct experiments in hospitals have shown it to be without any efficacy whatever as a remedy in small pox.

Insects and Fertilization.

BY PROF. ASA GRAY, CAMBRIDGE, MASS.

[The part played by insects in the fertilization of flowers. i.e., in the carrying of the pollen or fertilizing dust from the anther, which produces it, to the stigma, or that part of the pistil designed to receive it, is a subject now receiving much attention at the hands of naturalists. It not only affords an interesting study to the curious observer, but the fact itself is of importance to the cultivator, as some of our products depend upon the aid of insects for their perfection, and probably the fruitfulness of many of them is largely influenced by the abundance or scarcity of bees and other honey and pollen seekers. Professor Gray, of Harvard University, the distinguished botanist, has consented to give us in a series of articles, his observations upon the relations of insects to plants, which we are sure our readers will accept with pleasure. —Eds.]

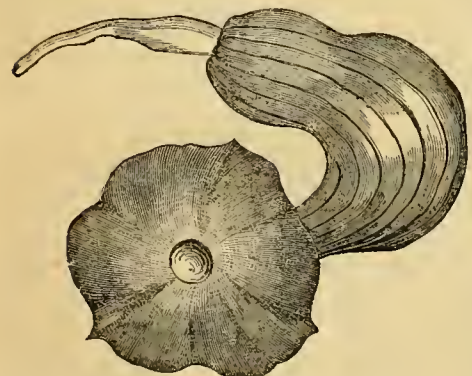


Fig. 1.—FLOWER OF THE DUTCHMAN'S PIPE, *Aristolochia Siphoc.*

Far the greater number of flowers are hermaphrodite, i.e., have the stamens and pistils together. And the anthers, which contain the pollen, are placed so near the stigma, which is

to be impregnated, and often in such position in respect to it, that it seems evident that Nature intended the stigma to be acted upon, in general, by the pollen of the same flower. *Self-fertilization*, as we may call it, seems to be very generally and very surely provided for in the case of hermaphrodite blossoms. Indeed, special pains appear to have been taken, in a great variety of cases, to make this result certain. Take a pea-blossom, for example, and all the flowers of that numerous family, where the anthers and the stigma are shut up together in a sort of pocket made of the two front petals. Or the showy *Dicentra* of the gardens, and all flowers of that family, where the anthers and the stigma are placed close together in a little sac made of two spoon-shaped petals, the bowls placed face to face, and united at the tip. Or the Dutchman's Pipe, shown in fig. 1, where the anthers grow fast to the stigma, and are secluded in the bottom of a long, crooked, and narrow-mouthed tube. We might mention *Orchis*-flowers, also; but their parts look so different from those of ordinary blossoms, that they are not so readily understood by those who are not botanists. But take such a familiar flower as that of any *Iris*, figures 3, 4, and 5. Here the stigmas are three little plates, one under each of the three petal-like branches of the style which occupy the center of the blossom, and curve over in front of the three outermost and largest leaves of the flower. And close to each stigma is a stamen, its long anther almost touching the stigma behind it. Here surely, one would say, the pollen shed from the anther must be intended to fall upon the stigma, which it is almost in contact with. This seems to be the very purpose of the arrangement. But closer inspection reveals a difficulty. The anther opens and sheds its pollen only on the face which is turned away from the stigma. On the other hand, the face of the broad stigma which alone can receive the pollen, is the one which looks from the anther. The couple are sitting close together, but, with back turned to back, they are not upon such cordial terms as outward appearances led us to suppose.

The case of the *Aristolochia* or Dutchman's Pipe is quite as unpromising. The anthers are stuck fast to the column formed of the three united stigmas, but below and behind the pollen-receiving surface or real stigmas;—in such a way that let the flower hang in whatever position it may, not a grain of pollen can ever fall on to the stigma. Fig. 2. And the crooked, narrow-mouthed tube which encloses the whole, effectually prevents all chance of the wind's blowing the pollen from the one to the other. So in *Orchises*, the pollen is all tied fast by delicate threads to a sort of stalk, and placed very close to the stigma; but in such a way that it can rarely fall on the stigma; in most cases it would never reach the stigma of itself. These are a few of the more striking or familiar cases out of hundreds that might be mentioned. What do they mean? Here on the one hand, as in pea-blossoms and the like, are such nice adaptations that the pollen shall reach its stigma. On the other hand, quite as many cases, apparently evincing the same intention, but where closer inspection shows something to prevent this purpose from being carried out. Nature appears to be at cross-purposes. Does she really contradict herself, or thwart her own designs?

Well; those who know something of these matters will be ready with an answer. Plants are helped out of these difficulties by the aid of

insects. To be sure, most flowers are feeding places for insects. These feed upon the nectar or honey which all such flowers produce. The

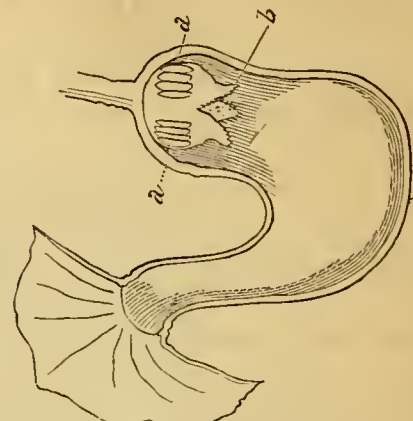


Fig. 2.—LONGITUDINAL SECTION OF FLOWER OF DUTCHMAN'S PIPE. a, a, ANTHERS UNDER THE LOBES OF THE STIGMA, b.

plants are essential to the insects, affording the entire sustenance of large classes of them. Is the reciprocity, as Sir Boyle Roche says, all on one side? Or are insects so attracted to flowers, of any use to the plant? We should suspect so, when we consider that the much greater number of flowers yield nectar, that many have sacs or pits, or hollow tubes which hold the nectar; and that this sweet matter which flowers so generally produce, is, so far as we know, of no

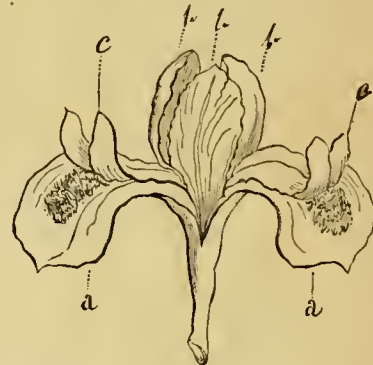


Fig. 3.—FLOWER OF AN IRIS OR FLOWER-DE-LUCE. a, a, TWO OF THE THREE OUTER PETALS; b, b, b, THE THREE INNER PETALS; c, c, TWO OF THE BRANCHES OF THE PETAL-LIKE STYLE.

direct use to the plant. That insects, in visiting flowers for honey, accidentally or incidentally aid in fertilization, by carrying pollen from anther to stigma, is familiarly understood. That they are necessary, or at least are the principal agents, in the case of such flowers as those of Willows, where the stamens and pistils are borne by different trees, is also familiar. And in these curious hermaphrodite flowers that

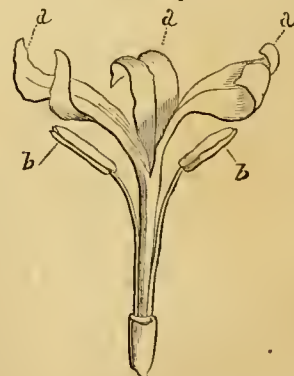


Fig. 4.—IRIS FLOWER WITH THE PETALS REMOVED; a, a, a, THE PETAL-LIKE BRANCHES OF THE STYLE WITH THE STAMENS b, b, b, JUST BENEATH THEM.

we are considering, we cannot resist the conclusion that the aid of insects is, so to say,

counted upon; that the blossoms are furnished with honey *in order* that they may attract insects. And it is easy to see that insects, in visiting these flowers, may help the pollen on to the stigma in cases where it would seldom if ever get there of itself. For instance, in the flower of Dutchman's Pipe, shown in figs. 1 and 2. A small insect, crawling into the flower and to the bottom of the tube, where a little nectar is secreted, could hardly fail to get some pollen on his feet or legs on the way out, and would be very likely then to pass over the stigma and leave some pollen upon it. It is interesting to see how admirably adapted to insect action the flower of Iris is, and to watch a bee or bumblebee in his visits to it. The only access to the nectar in the bottom of the flower is between one of the outer recurved leaves of the flower (which in most species bears either a crest or beard), and the petal-like branch of the style directly over it; for the intermediate spaces are occupied by the three inner leaves or petals, which are upright and curve inward, so as to bar access in that quarter. The insect, alighting on the crest or beard, thrusts his head under the petal-like part of the style, and thence by his proboscis, or sucker, reaches the nectar below. In so doing he rubs the top of his rough and hairy head against the outer or open side of the anther, and gets it well covered with the loose pollen. On withdrawing it, he would never leave any on the stigma, for this faces the other way; but on entering anew this plate or shelf

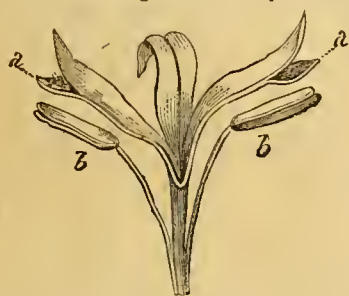


FIG. 5.—A LONGITUDINAL SECTION OF FIG. 4, TWO OF THE BRANCHES OF THE STYLE BEING CUT THROUGH SO AS TO SHOW THE PLATE-LIKE STIGMAS *a, a*, WHICH LOOKS FROM THE ANTHERS *b, b*.

of stigma, projecting a little forward, is hit by the head of the bee, and in such a way that the pollen-powdered head rubs against the proper surface of the stigma, where it is pretty sure to deposit some of the pollen. A moment's examination of the flower itself will make the whole operation clearer than a long description.

So the puzzle is explained. Such flowers are arranged for the visits of insects, and the species depend upon them for their fertility, that is, for their continued existence. Insects are as needful to them as they are to the insects which they nourish. So many cases of the kind are now well known, so many flowers that cannot fertilize themselves at all, and so many more that cannot make a sure thing of it without help, but which are visited by insects and do seed regularly, that we must conclude they are intended to depend upon insect aid. But when we think of it, another puzzling question arises. Are we to believe that in such flowers (as that of Iris for example), the pollen is placed near the stigma, but where it cannot reach it of itself, nor by any ordinary chance, *in order that an insect may overcome the difficulty?* That the anther and the stigma of Iris, which, if they faced each other, would do their own work, are turned from each other *in order that a bee, seeking its food, may carry some of the pollen from the one to the other?* We can not believe that. We have not yet got to the bottom of this matter.

The Peach-tree Borer.

The fourth number of the Practical Entomologist is occupied by an essay on Borers, by its associate editor, B. D. Walsh, Esq., of Illinois. He pictures the various troublesome insects, the larvæ of which bore for a living, and describes them in a popular and readable style. We give his engravings of the perfect insect of the Peach-tree Borer, and condense the following from his account. This borer generally works a little below the surface of the ground; it lives only one year in the larva state, and the perfect insect comes out in July



Fig. 1.—MALE.

and August. The following are the various remedies and precautions that have been proposed.

1st. The Corn-cob and the Knife.—In autumn remove the earth from the base of the trunk, and rub the bark vigorously with a corn cob. This kills the larvæ before they burrow under the bark. In spring use a knife to reach them.

2d. Hot-water.—Pour it on the part attacked; it kills the larvæ without hurting the tree.

3d. The Hoe Cure.—In June bank up the trees a foot high, and in autumn before the frosts set in, level down the bank. This exposes the larvæ to the frosts and birds.

Preventive 1st.—Remove the earth from around the base of the trunk, and surround it with a strip of roofing paper a foot or more wide; tie it on with strings, taking care to have at least two inches of paper under ground. See that no larvæ or eggs are there before using the paper.

Preventive 2d.—Remove the earth, and surround the base of the tree by a bundle of straw to the thickness of two inches; tie it securely and cover the butts of the straw with earth.

Preventive 3d.—Place a heap of tobacco stems around the butt of the tree in June. The smell is offensive to the parent insect. In using any of the preventives, the borers, should they already be in the tree, are to be probed with a knife or wire. Their presence is indicated by exudation of gum from the wound they make.



Fig. 2.—FEMALE.

Evergreens for Wind-breaks.—Willows.

Under this title we have a communication from Mr. S. J. Frost, Hudson River Institute, Claverack, N. Y., which sets forth at some length the advantages of shelter from the prevailing winds, and the superiority of evergreens for this purpose. As we have frequently advocated the use of shelters of this kind, for the house, and barns, and for the orchard and garden, we can not give room to our correspondent's arguments in their favor. His practical advice is however timely and may be followed by those who live in localities where young trees may be had from the forests. Those who live where there are no native evergreens must depend upon the nurseries, which furnish young Norway Spruce, Hemlock, and Arbor Vitæ, at moderate prices. Mr. F. says:

"For planting evergreens, May is the most suitable month. They are very easily taken up, since the roots grow in a close knot about the stock. For a wind-break, Hemlock is the best and most hardy; but Pine, and Flat Leaved

Cedar (the Arbor Vitæ of the nurseries,) will also answer to the purpose. Go to a pine or hemlock grove with a team, select the smaller trees or shrubs, cut with a spade, or better an old axe, a circle large enough to include the most of the roots, and the tree may be lifted out very easily. The dirt will cling to the roots, and their growth will hardly be checked. The great trial for evergreens, taken from the woods, is the sunshine, to which they have not been accustomed. But if they are set thickly and in considerable numbers, only a few will die. Those obtained from the nurseries are acclimated and do not suffer in this way, but they are more expensive. Evergreens are not suitable for shade. Except a few low, choice specimens, for ornament, they should not appear in the front yard. They will form a hedge in almost every kind of soil, and this is their proper use. But if the soil is very wet, a willow hedge will make a good wind-break. Willow (the common yellow) twigs or rods set closely, say from one to two feet distant, will soon grow into a beautiful summer hedge, and even in winter be a fine protection against winds. If set in this way they will not grow too large, and the dry limbs will afford the best of light fuel for kindling and oven-wood. The canes of the willow when dry, are tough and substantial, notwithstanding the brittleness of the green bough. My neighbor obtains his whole supply of oven-wood—no unimportant consideration—from the dead limbs of a willow hedge set to resist the washing of a stream. Nothing more is necessary than to sharpen the end of the stakes and thrust them into the soft soil."

Peas and their Names.

Those who are accustomed to look over seedsmen's catalogues and advertisements, especially the English ones, cannot help being amused with the great number of new peas that appear every spring,—as numerous as spring styles of calico. The sellers of these so-called novelties show a commendable amount of ingenuity in selecting attractive names, and we have: First Crop, Express, Ringleader, Surprise, Advance, Wonderful, Victory, etc., of the different dealers. A committee of the London Horticultural Society, in 1865, procured all the varieties offered for sale, and planted them in their garden at Chiswick, alongside of the old and well known varieties, and carefully watched and timed their periods of blossoming and maturing, and compared the old and the new in all respects. The committee's report has been recently published, and is quite interesting to all but the seed growers who have pet peas, as it shows that but few of the new sorts have anything novel about them except their names. Thus, Carter's First Crop, Dickson's First and Best, and Sutton's Ringleader, all prove to be identical with Dillistone's Early, an old and well established early kind. Turner's Wonderful, Carter's Prince of Wales and Princess of Wales, and Yorkshire Hero, are all alike, and the same as McLean's Favorite. The Horticultural Society have done well in showing up this early pea business, and such trials not only protect the public from imposition, but they benefit the honest seed raiser whose varieties, if really valuable, are thus brought into notice and commended. When will our Department of Agriculture give us one bit of positive information like this? Under its present management it will of course prefer to continue in the seed business and send out peas under wrong names.

The Flowering Raspberry.

(*Rubus odoratus*.)

Those who have been along the rocky banks of the Hudson in summer time, must have noticed the abundance of, what appeared at a little distance to be, small purplish roses; upon closer inspection these flowers would probably have turned out to be those of the Flowering Raspberry. All raspberries flower, but this has so much larger blossoms than any other native one that it has received this popular name. It has numerous stems, and when growing with plenty of room, makes a large clump, from three to five feet high. The leaves are not compound, like those of the common raspberry, but are large, simple, and lobed. All the young growth, as well as the flower, flower stalks, and unexpanded flowers, are covered by numerous hairs that exude a sticky secretion, which makes the plant clammy to the touch, and which has a peculiar odor. The flowers, which are produced nearly all summer, are about two inches across, of a rich purplish crimson color, and of a delicate texture. They are succeeded by a broad, flat fruit, which is of very good flavor, but which is not produced in sufficient abundance to make it worth while to cultivate the shrub for its fruit. As an ornamental shrub it is worthy of more attention than it has received, as it is hardy and of easy culture. By cutting out the old wood occasionally, and shortening the new, the plant may be kept from growing unshapely. It does best in a partial shade, as the hot sun soon destroys the beauty of the rather delicate flowers. We do not find this shrub generally kept in the nurseries, but it is not rare in rocky places in the Northern States, and is readily transplanted.

Something about Annual Flowers.

There are those who discard annual flowers altogether, as they are troublesome to start from the seed, and generally rather late in coming into flower, and many of them, when they are just in their prime, are cut off by the frost. We would not have our garden all annuals, any more than we would have it all bedding plants, or all perennials, for each fills a want not satisfied by the other. A number of things formerly grown in the greenhouse, as bedding plants, do very well when treated as annuals, such as the Petunia and Salpiglossis, and it is proposed by some of the English florists to grow the Verbena as an annual, as the rust makes it so difficult to keep it over the winter. Those who have established homes can enjoy their well chosen collection of perennials; those who have money can

buy all the bedding plants; but there is a large class who must depend upon annuals. These are, after all, the popular plants, and even the poorest, whose garden is confined to a box in the window, can give a few cents for seeds and gather a large crop of flowers and enjoyment. A seed catalogue is, now-a-days, a bewildering thing. Our seedsmen must keep up with the

of its fragrance. We have met a few—very few—persons who disliked it, but it is a general favorite. Candytuft, or, as some writers have it, Candiatuft, is hardy, keeps long in bloom—all the longer if often cut, is good for bouquets, and may be had in white, crimson and purple colors. With these two plants one can have an elegant and fragrant bouquet every day. To



FLOWERING RASPBERRY. (*Rubus odoratus*.)

times, and their catalogues become respectable sized volumes. The seeds introduced each year as novelties, are accompanied by the descriptions given by their European growers, and the novice is quite sure to be influenced by these highly colored descriptions, and order untested things at 25 and 50 cents per paper. He may get enough good plants to satisfy him with his outlay, but the chances are that he will be dissatisfied, and will throw all the blame on the innocent seedsman. If he had ordered old and tried things, at 5 and 10 cents a paper, he would have been much better pleased. We like novelties, and favor their introduction, but wish them to be bought only by those who are willing to test new things, and there are, fortunately, a plenty of such. The general public—and it is for them that this article is written—can afford to wait until amateurs have established the value, in our climate, of these new plants. No task is more difficult than to make out a list of the best annual flowers. If confined to two, four, or six varieties, there would be no difficulty, but the embarrassment increases in proportion as the number is added to. If confined to only two annuals, we should unhesitatingly choose Mignonette and Candytuft. Mignonette is, to our notion, the annual of annuals—on account

make a show in place, nothing exceeds Drummond's Phlox, and it may be had in all shades, from white to the deepest crimson. Equally brilliant is a bed of Portulacas. They do well in poor soil, and when the sun is out are always gay. Then for plants to be grown as single specimens, the Camellia-flowered Balsams, and the finer sorts of Asters, the last almost innumerable in variety, and all fine. Both of these should have plenty of room. The Everlastings are favorites of ours, as they all look well in the garden, and if picked when first expanded, and carefully dried, they may be enjoyed all winter. The best of these are Rhodanthé, Acroclinium, Xeranthemum, Ammobium and Helichrysum, in their different varieties. Double Zinnia and a Dwarf Marigold, called Tagetes signata pumila, are among the novelties of a few years ago that have become established favorites. The Dwarf Convolvulus makes a great show. Whitlavia, Leptosiphons, Gilias, Collinsia, and the Nemophilas are all neat and pretty, and should be sown early, or in a partially shaded place, as they do not like our hot suns. Then there are some

odd things that one likes to have, such as the Ice Plant, with its dew-spangled stem and leaves; and the Sensitive Plant, the irritable foliage of which is a constant source of amusement. If one has the room, the Castor Oil Plant may be grown for its tropical look, and Cannas, elsewhere described, will do well from the seed. In sowing annuals in the open ground, do not sow too early nor too deep, as it is from a neglect of these precautions that the majority of failures come. Wait until the soil is well warmed, sow in finely pulverized earth, cover the seeds about their own depth, and press the soil down firmly upon them. When the plants are up, and large enough to handle, thin freely, to get strong plants to transplant.

PROPAGATING HOUSE OVER A KITCHEN.—Joannes. A small propagating and green house might be built in the place described, but it would not be practicable to heat it from the kitchen fire. Water tanks are made of narrow plank with painted joints. As you have never seen a propagating house, you would do well to visit one, as it would save much expense in constructing one on a small scale. Some hints may be got from page 314, Oct. last, but the method of heating is different from that shown there.

THE HOUSEHOLD

Household Hints.

[Constant contributions to this department of the *American Agriculturist* are solicited from our readers.]

A WRITTEN LIST of all the articles in the house will take but little time, and will often be very useful. A housekeeper writes to the *Agriculturist* that she frequently lost articles, supposed to be stolen by servants, but when it became known that she had begun to keep a list of everything—of handkerchiefs, collars, pillow-cases, indeed of everything, even to chairs, dishes of all kinds, brooms, pails, dish-towels, sad-irons, etc., etc., and that she now and then compared the articles with the list, there was a wholesome fear of that record; mysterious disappearances ceased, and breakages were much less frequent. A separate page was devoted to noting down all breakages and by whom, with the date against each article. Another family, having such a list, saved it when the house was burned, and was thus able to get a much larger sum from an insurance company than could otherwise have been done. These little items count up largely in a valuation. The date of purchase and cost of every article was always recorded.

TO HAVE SUNSHINE IN THE HOUSE.—Put the children to bed *early*, with light suppers, that they may sleep well. They get up bright-eyed, clear-headed, sweet tempered, with sun-light on their countenances. Try it—and take a little of the prescription *yourself*. The effects are magical. So writes one who has tried it. She says that with well rested brains and limbs she does more in twelve hours than she used to accomplish in eighteen, and finds far less friction in the household movements now than then. She finds her own feelings and spirits are contagious. Try two extra hours of sleep for a week, and note the results.

NEVER HIRE: (1) a girl who talks about the defects of her last employer. She has a bad tongue, will be a complainer in your family, and ever make trouble, and will talk about you to others.—(2.) Never hire one who professes to know everything. She will know few things, if anything, well.—(3.) Never hire one who begins by inquiring what she has to do and not to do. Everything you ever listen to of this kind will make trouble afterwards.—(4.) Never hire one who talks much about how her former mistresses did this and that. Say firmly, but calmly, "Every housekeeper has her own way of doing things, and that way is best for her; I have my way, and expect that to be followed."

A BILL OF FARE is supposed to be appropriate only to hotels, restaurants, and the like. A lady writes to the *Agriculturist*: "I used to be worried about what to get for meals to keep up a variety, and often racked my brain, when weary, trying to think what to get for the next meal. Often, after a meal was nearly ready, I thought of something else I wished I had planned for. Two years ago I wrote down on a card a list of the things convenient to get at all times; another list of 'occasional' dishes, and another list of things that may sometimes come in for a change, or as a rarity. Against some I have marked, H. F. B. (Husband's Favorite Breakfast); others, H. F. D., and H. F. S. (His Favorite for Dinner and Supper). Some are marked E., for economical, etc. A glance over this has been a great help to me often, and I would on no account be without it. It contains a list of the sweetmeats on hand, of the several kinds of cake, etc. Of course, I have my recipe book, in which are written down all cake and other recipes, for constant reference whenever memory fails me. I began this plan of systemizing from some hints given in the *Agriculturist*, and it has done a great deal to lighten my cares."

PAIRING THE NAILS TOO CLOSELY is the prolific cause of most of the trouble with them. If the corners are cut down too much, the flesh grows over them, producing soreness. Always cut the

nails only a little rounding, leaving the corners projecting above the flesh, which they are designed naturally to protect. If the nail inflames at the corners, don't pair it off, but raise it with a bit of cotton, protect it from pressure, and let it grow out over the flesh, when the inflammation will cease.

ORNAMENTAL STRAWBERRY PIN-CUSHION.—A lady at Lockport, N. Y., sends us a very pretty strawberry, which, at a little distance, looks like the real fruit, but of a size (4 to 5 inches in diameter) that overshadows even the great "Agriculturist" berry. It is so ornamental, and so readily made, that it is worthy of imitation. The cone is covered with scarlet merino; the seeds very naturally represented by stitching through it with yellow sewing silk. The calyx is made of green velvet. A circular piece of pasteboard, inside of the base, keeps it in shape, and makes it stand firmly. The filling may be of any convenient material. Small specimens, filled with emery, are useful as needle cushions, the emery sharpening, or at least keeping the needles bright.

FOR CHAPPED HANDS.—Mrs. A. B. Edwards recommends rubbing a little honey on them while wet from washing, and then drying it in.

NEVER READ OR SEW with any light from the window or a lamp falling directly upon the eyes. Millions have lost their good eyesight from non-observance of this simple rule. It is founded on scientific principles which we will not take room to explain at length. The light direct upon the eyes contracts their pupils, so that not enough rays are admitted from the printed pages or fabrics sewed, to make them plain to the sight. Always sit so that the light from the window or lamp shall fall *over the shoulder*, usually over the left one as it will not then be obstructed by the right hand in sewing. Another advantage, and a great one, is, that when facing the light, one naturally inclines forward to save the eyes. This cramps the chest and lungs, and is injurious to the health; but with the light from the side, or over the shoulder, one inclines to sit in a much more upright and healthful position. Every one who follows this suggestion, will find it conduce to comfort, health, and good vision.

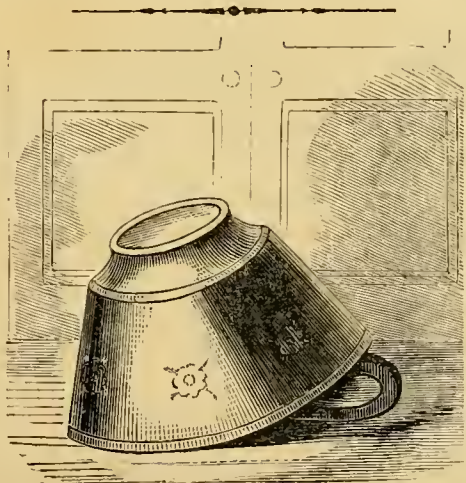


Fig. 1.

A Safe and Sure Mouse Trap.

The accompanying illustrations were sent us by "D. J. T., of Essex Co., Mass., with a statement of such good success in its use, that every housekeeper ought to know how easy he or she can make a good mouse trap. A piece of sole leather is bent, as shown in Fig. 2, and the ends tied to-



Fig. 2.

gether, far enough back to allow them to be sprung apart, and a bit of cheese or other bait inserted.

This is placed under the edge of a bowl, as shown, the bowl resting on the curve of leather, so that a little movement of the leather will cause it to slip in and let the bowl down. It should be set upon a plate or pane of glass. When the mouse is caught the bowl may be inverted, right side up, and filled with water, or immersed in a bucket of water, and so the mouse be drowned.

Household Hints for the "Men-folks."

A lady writes: "Pray do print the enclosed slip, which I cut from the *American Agriculturist*, years ago, and which I suppose both you and a good part of your old readers have long since forgotten. When it came out, husband said you meant it all for him, but, as you did not call his name, he could not take it as a personal affront. We have kept the slip neatly, as you see, and every word has been heeded. It abolished all dull shears, knives, etc. I beg you to print it for the half million or more of new readers, and suggest to every housekeeper to show it to her husband the first time she finds him in a particularly pleasant mood."...[We defer to the judgment and wishes of our fair correspondent, and give the items. The husband who reads it will of course not understand this as aimed at him—we are speaking of "another man."—Eds.]

On a recent evening we happened into his house, (the other man's house), and saw his wife trying to cut out a garment; or, possibly, it was a patch for a coat for her boy or her husband; but it was hard work, and a ragged edge was left. She made sundry efforts, and, by clipping several times, it seemed to come into about the desired shape. The fact was, the rivet was loose, and as for a cutting edge, that was worn off months ago. We noticed that she looked at her thumb and fingers to see if they were blistered. Three minutes with a hammer, to head the rivet, and a grindstone, whetstone, or even a file, to give a cutting edge, would have made all right, saved the wife several hours of time in the course of each week or month, and enabled her to do her work much more easily, and to patch more neatly. But her husband was a "hard working man," and hadn't the three minutes' time. Having some business with him, we found him at the store, sitting in his accustomed place on the counter.

The wife went to fix up the wood fire, and attempted to lift up a brand with the tongs, but the legs would turn and slip by each other. After several vain trials she pushed up the fire, and swept up the coals that had scattered from the falling brand. One minute's time, with a hammer, would have tightened the joint and made the legs meet square.

A daughter was trying to cut hash or mince meat, but the thug, thug, indicated that the dull knife was only mashing and not cutting the meat. The tired girl showed plainly that she had been at it for an hour or more. Three minutes with the grindstone, or whetstone, or a file, once a month, would give that knife a sharp edge, and save many a pound of elbow grease, many wearisome hours, give that daughter a little extra time to read the *American Agriculturist*, (only the other man "don't take it"), and the finely cut tough meat would be far more digestible than when swallowed hurriedly in large pieces. (A Halc's meat cutter, costing \$4, would cut the hash for a large family in four minutes, or in less time, and do the work excellently.)

One Monday we took dinner at the house of this "other man." The bread was not in smooth cut slices, but appeared as if haggled off from the loaf with the back of a scythe. The dried beef, instead of being in nice thin shavings, nice to look at, and nice to eat, was in thick, scraggy pieces, as if chopped off with a very dull hatchet. The table knives appeared to have been sharpened on the iron shovel handle, or on the stove edge, so long, and were so rounded off that, except from the shape, it would have been difficult to tell on which side the edge had been. Five or ten minutes with the grindstone would have given a good edge on one side of every knife in the house. How much work it would have saved in the kitchen, in preparing meals, cutting up meats paring potatoes,

etc., the reader may figure up. (If the writer was the wife of this "other man" he would take a few lessons on knife-sharpening and be independent.)

Glancing through the open kitchen door, we saw Bridget trying to stop an old leak in a boiler, with a plaster of dough, but it would come off, and the water would run on to the stove and over the hearth. A drop of solder would have saved all this trouble and vexation. If the "other man" had read the *Agriculturist* for November, 1859, page 342, he would have known how to apply the solder himself in less than three minutes.

Beef Steak.

A rich, juicy piece of steak is as delicious a morsel as a hungry man can close his lips upon, yet how few know what it is. We presume nearly half those who eat beef steak at all in this country, fry it; certainly on the Continent of Europe a broiled steak is rarely or never seen. The Europeans in this country surely stick to Fatherlandish customs in regard to steaks and chops, with a tenacity worthy a better cause. English and Americans broil their steaks; nevertheless, they make a very poor job of it in most cases. The fat drips into the fire and smokes, and flames and scorches the meat; the heat burns the edges to a coal, and the poor little thin steak curls and writhes on the gridiron as if it were alive with torture. Now and then it is put upon a plate and pricked and pressed to get a little juice out, which is preserved to be salted and buttered and watered, to make a little gravy. Finally, the burnt parts are scraped off, butter, salt, and pepper, administered, and it is sent to the table, soaking in a lukewarm gravy, on a cold platter.

A friend who has taken great satisfaction in beef steak properly cooked, sends us the following article cut from *The Homestead*, which was formerly published in Connecticut. We endorse it entirely, only we must say that a little nice butter, even if it does cost 75 cents a pound, does not, to our taste, either disguise or injure the flavor of the beef:

"When you are so lucky as to get a beef steak, don't spoil it in the cooking. It should be cut nearly an inch in thickness, and divided—by the natural divisions where practicable—into pieces the size of your hand, or thereabouts. Cut away the most of the fat. If you happen to have such a thing as a "beef-steak-pounder" in the house, put it into the fire and burn it to a coal,—the wood it is usually made of furnishes capital coals for broiling; but any coals will do, if they are hot enough.

"The best gridiron is the double one of wire, which you can shut your meat into and turn without a fork to let the juice out, but any gridiron will do if it is clean. If you have much else to see to, besides the steak, you had better have something else for breakfast, for it is a sin to put a beef-steak over the coals and leave it to warp and squirm, and dry up, until it is as tough and tasteless as the sole of an old shoe. But if you have a conscience void of offence with all men, and are able to concentrate your entire energies upon the business, put your steak over the fire. Now you know that the outside of a broiled piece of meat must be crisp, and [Turn it.] the inside juicy, to make it the most palatable and [Turn it.] nourishing. If you allow it to rest long with one side to the fire, [Turn it.] the juice and flavor rise to the surface and are lost. The great art [Turn it.] is to expose the meat at the start, for a moment, to such an intense heat that [Turn it.] the severed fibers may be seared in such manner as to seal up (so to speak) the moisture. [Turn it.] Steak can be cooked in this way until it will not only look bloody when cut, but [Turn it.] will satisfy fully those who like "rare" beef, without offending [Turn it.] such as prefer it "well done." Butter is worse than wasted,—of course [Turn it.] you'll have it on the table for such as wish to disguise the taste of beef, as well as pepper and salt. [Turn it.] Your motto is beef and fire. If your fire is a hot one, the steak is nearly done. It may not be considered impertinent to suggest [Turn it.] that, the potatoes being just done, too, the family may gather round the ta-

ble, so as to receive the steak upon their hot plates directly from the fire. There will be time for "grace," before eating, and you'll be thankful after, whether it is customary or not to say so."

Hints on Cooking, etc.

Queen of Puddings.—A new pudding, with this name, recently furnished to the "*Agriculturist* Household," by Mrs. Wm. Morehouse, of Buffalo, N. Y., has been tried with very satisfactory results: Into one quart of sweet milk, put one pint of fine bread crumbs, butter the size of an egg, the well beaten yolks of 5 eggs; sweeten and flavor as for custard; mix the whole well together. While the above is baking, beat the whites of the 5 eggs to a stiff froth, and add a teaspoonful of powdered sugar; pour it over the hot pudding when cooked, return it to the oven, and bake to a delicate brown. We like the above without addition, but some prefer a layer of jelly, or canned peaches or other fruit, over the pudding before the frosting is added.—No sauce is needed. It is not only delicious, but light and digestible.

Nice Gingerbread.—The following directions are furnished to the *Agriculturist* by one we know to be a good housekeeper—who has a healthy family as evidence of good cookery—with the remark that "they make a gingerbread equal to the best article from the professional bakers." To 2 teaspoonfuls of molasses, and 20 tablespoonfuls of melted lard, are added 7 teaspoonfuls of soda dissolved in 8 tablespoonfuls of boiling water, 2 teaspoonfuls of crushed alum dissolved in 3 tablespoonfuls of boiling water, 1 tablespoonful of ginger, and a little salt if the lard is fresh; the whole well stirred together. Then 4 teaspoonfuls of cream of tartar are mixed thoroughly with a pint or so of flour, and stirred in quickly, with enough more flour added to make a dough as soft as it can be conveniently rolled. Bake in a quick oven. Some may object to the alum, but a teaspoonful or two in a large milk-panful of cakes is but a homeopathic dose at most, and no more "mineral" than the salt used in all food. It gives the gingerbread the peculiar lightness of that made by bakers. Those who eschew alum must buy nothing at Bake Shops.

Corn Pudding.—Cheap but good. 1 quart of milk to 4 tablespoonfuls of meal. Boil the milk, stir in a little molasses and ginger into the meal, and stir the boiling milk into the meal and let it get perfectly cold. Bake an hour and a half. This is an excellent pudding, but the directions must be exactly followed.

The Justice's Pudding.—2 quarts of bread cut thin; 1 quart of milk, poured boiling on the bread; let soak an hour or two; add 1 quart of stoned raisins; 1 teaspoonful of syrup. Boil four hours in a box or bag, and serve with cold sauce.

Mince Pie without Meat.—Prepare the pie-crust and applies the usual way, when seasoned and in the pie pans, fill the top of the apples with custard, prepared the same as for custard pie. Then put on the top crust and bake. It is a good imitation and preferable to mince pie.

"Boiled Flour: A Light Supper Dish."—Under this head we find the following strongly commended in Mrs. Warren's (London) *Work on Economy in Living*: "Prepare a small calico [muslin] bag a quarter of a yard square, and sew it well all round; stuff into it as much flour as it will hold, so that it shall be packed almost as hard as a stone. Tie securely, put it into a saucepan of boiling water and boil four hours, filling up the saucepan with more water as it boils away. Then take it up, peel off the skin, crack or break the ball of flour into pieces, roll it with a rolling pin on a pasteboard; then sift it, and, when it is cold, put into dry tins, such as tea, coffee, or mustard tins [boxes]. This is quite equal to maizena, or Oswego corn flour, and may be made as arrowroot custard, only it must be boiled. Costs not one-third of maizena. It is strengthening and very delicious."—[There is less difference in the cost of

flour and maizena, or corn starch, here than in England, but the above is worthy a trial. Please let us have the result.—ED. AMERICAN AGRICULTURIST.]

Boston Crackers.—Will some one having experience please send directions for making them.

Stale Bread Fritters.—Cut stale bread in thick slices and put it to soak for several hours in cold sweet milk. Then fry it in sweet lard, or butter the slices and fry them, and eat with sugar or molasses, or a sweet sauce. To make it more delicate, remove the hard crust before using.

Boiled Parsnips.—Parsnips are cooked as carrots, but they do not require as much boiling, and are sometimes served differently, being sliced lengthways, dressed with butter and pepper, or mashed with a little cream, some butter, and seasoned with pepper and salt. They are excellent fried, also made into a stew with pork and potatoes.

Wings of Geese, Turkeys, etc., so convenient as dusters, may be kept for a long time thus: Thoroughly dry them and place them, flesh-end down, in a tub, keg, or any thing convenient, and fill with dry sand.

BOYS & GIRLS' COLUMNS.

Was he Mean?—True Courage.

It is very customary among bad boys, as well as among bad men, to try to persuade others to join them in folly and sin—to pull them down to their own level—by appealing to their courage. When a man challenges another to fight a duel, it requires greater courage to stand up boldly and say I will not be a murderer, than it does to face the weapon of his challenger. When a boy is challenged to engage in a bad enterprise, it usually requires a higher, nobler courage to withstand the jeers of his tempters, than it does to set aside the good will of his parents and friends.—Here is an excellent illustration of true courage, as told in the *Children's Prize*. Read the story carefully and act upon the lesson it teaches:

A new scholar came to Rackford school—a well-dressed fine-looking lad, whose appearance all the boys liked. —There was a set of boys at this school who immediately invited him to join their "larks." Boys know pretty well what that means. They used to spend their money in eating and drinking, and often ran up large bills, which their friends sometimes found it hard to pay. They wanted every new scholar to join them, and they contrived by laughing at him, or reproaching him, to get almost any boy they wanted into their meshes. The new boys were afraid not to yield to them.—But this new scholar refused their invitations. They called him mean and stingy—a charge which always makes boys very sore.—"Mean!" he answered, "and where is the meanness of not spending money which is not your own? And where is the stinginess in not choosing to beg money of your friends to spend it in a way which they would not approve? For, after all, our money must come from our friends, as we haven't it, nor can we earn it. No, boys, I will not spend one penny that I should be ashamed to give account of to my father or mother, if they asked me."—"Eh! not out of your learning strings, then? Afraid of your father; afraid of disappointing you? Afraid of your mother? Won't she give you a sugar-plum? What a precious baby?" they cried in mocking tones.—"And yet you are trying to make me afraid of you," said the new scholar, boldly. "You want me to be afraid of not doing as you say. But which, I should like to know, is the best sort of fear—the fear of my school-fellows, which would lead me into what is low; or fear of my parents, which will inspire me to things noble and manly? It is very poor service you are showing me, to try to set me against my parents, and teach me to be ashamed of their authority."—The boys felt that there was no headway to be made against such a new scholar. All they said hurt themselves more than it hurt him, and they liked better to be out of his way than in it—all the bad boys, I mean. The others gathered around him, and never did they work or play with greater relish than while he was their champion and friend.—"That new scholar is a choice fellow," said the principal, "and carries more influence than any other boy in school. They study better and play better where he is; you can't pull him down. Everything mean and bad sneaks out of his way."

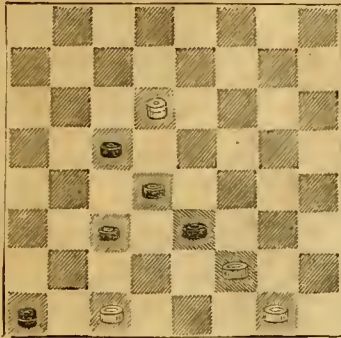
The Unknown Number Puzzle.

Answer and correction.—The top figures of the columns containing the numbers sought, add up just that number thus: 55 is in the first three and last two columns and 1+2+4+16+32 equal 55, and so of any other number up to 63.—[In the 3d column, 61 should be 63. Please mark your paper with this correction.]

The Game of Checkers or Draughts.

POSITION NO. 5.—Black to play and win.

Black.



White.

GAME NO. 5.—WILL O' THE WISP OPENING (*)

Black.	White.	Black.	White.
1—11 to 15	23 to 19	16—13 to 22	25 to 17
2—9 " 13	(a) 22 " 18	17—8 " 11	17 " 13
3—15 " 22	25 " 18	18—2 " 6	31 " 26
4—10 " 14(b)	18 " 9	19—10 " 14	16 " 12
5—5 " 14	(c) 29 " 25	20—7 " 10	24 " 19
6—8 " 11	25 " 22	21—15 " 24	28 " 19
7—6 " 10	27 " 23	22—11 " 15	19 " 16
8—4 " 8(d)	(e) 24 " 20	23—18 " 23(i)	26 " 19
9—11 " 15	25 " 24	24—15 " 24	16 " 11
10—1 " 5	(f) 32 " 28	25—10 " 15	11 " 7
11—5 " 9	(g) 19 " 16	26—3 " 10	12 " 8
12—12 " 19	23 " 16	27—15 " 19	8 " 3
13—14 " 18	(h) 22 " 17	28—10 " 15	3 " 7
14—13 " 22	26 " 17	29—11 " 10	7 " 11
15—9 " 13	30 " 26	—Drawn.	

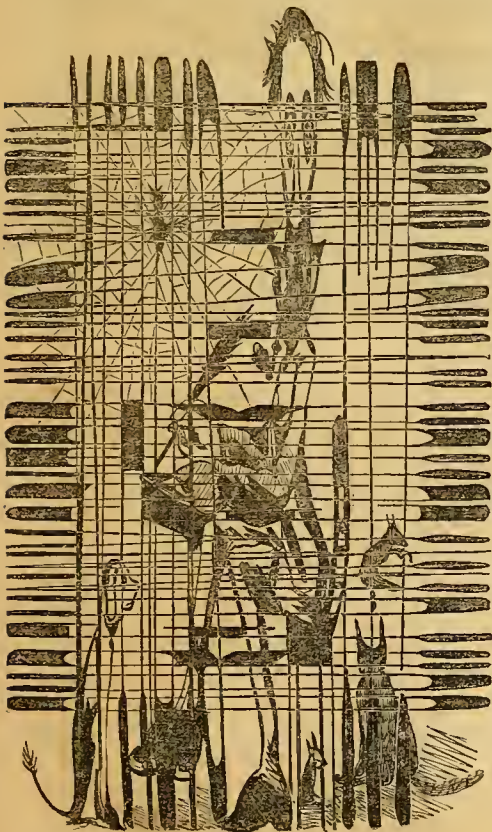
(*) Is so called in Anderson's Treatise on Draughts, because of the peculiar positions that occur in playing the game. It is formed by the first three moves, (a) 26 to 23 draws, (b) 5 to 9, or 7 to 11 draws, (c) 27 to 23 draws, (d) 11 to 15 draws, (e) 22 to 18 draws, (f) 22 to 17 Black wins, (g) 31 to 27, or 30 to 25 Black wins, (h) 30 to 23 Black wins, (i) 15 to 19 draws.

Solution to Position No. 4. (See April No., page 145.)

White.	Black.	White.	Black.
1—22 to 27	13 to 17	9—10 to 6	29 to 25
2—20 " 23	5 " 9	10—6 " 1	25 " 29
3—27 " 23	9 " 11	11—1 " 6	29 " 25
4—23 " 19	14 " 18	12—6 " 10	25 " 29
5—19 " 15	18 " 22	13—10 " 15	29 " 25
6—26 " 30	17 " 21	14—15 " 18	25 " 29
7—15 " 10	22 " 25	15—18 " 22	21 " 25
8—30 " 26	25 " 29	16—26 " 30 and wins.	

"Puzzles for Sharp Eyes."

Under this title we presented last month (page 149) two illustrations entitled "The singular sign," and "An ene-



A PORTRAIT.

my in the camp," with the promise to make them plainer for those who failed to discover the meaning. Figure 1 can be read after a few trials, by holding the page nearly on a level with the eye; then looking from the bottom you may see the words "Orange Judd & Co." Turn the page so as to look from the right hand side, still keeping it on a level with the eye, and you will find "American Agriculturist, No. 41 Park Row." In Fig. 2, "An enemy in the camp." Look steadily at the white part from a distance, and you may find a fox represented, that has seized the dark-colored chicken on the right, by the neck. If it be not perceived in this way, lay a thin piece of paper over the picture, and with a pencil trace the outline of the white part in the middle of the picture; then you can soon discover it.—We present herewith another picture puzzle, presenting a portrait of a singular looking genius, with whom no doubt you would like to become acquainted. He does not appear at first sight, but will be discovered by careful observers.

The Courageous Minister.

At the beginning of the civil war in England, Parliament had forbidden clergymen to read the liturgy or service of the Church, under the severest penalties. Dr. John Hacket, rector of a Church in London, continued to read the daily service as before. One Sunday a sergeant, accompanied by a soldier, rushed into the Church, and with a loud voice commanded him to desist, but he with a steady voice and intrepid countenance continued. The soldier pointing a pistol at his head, threatened him with instant death, unless he should cease reading. The undaunted minister calmly replied,—"Soldier I am doing my duty, do you do yours!" and read on. The sergeant and soldier, abashed, left the Church.

A Witty Ferryman.

Before a certain bridge was built in Lancashire, England, passengers were ferried over by an eccentric boatman living near the bank. A nobleman who used to cross frequently, was accustomed to give the boatman a shilling, although the regular fare was only a penny. One day when crossing he determined to surprise the boatman, and accordingly on reaching the opposite shore he stepped ashore and walked away, without even putting his hand into his pocket. The ferryman, in great astonishment looked after him a moment, and then called out "My lord, if ye have lost yer purse, remember it was not in my boat." The nobleman immediately rewarded his wit with double the usual fee.

Whistles that Imitate Birds.

Every boy that has a knife will soon be hunting up the twigs of linden (basswood), willow, etc., to form whistles, as the bark will soon "peel."—What makes the sound of a whistle? Strike a piano wire, or jar a violin string with the rough horse-hair bow, and the string will shake or vibrate. The vibrations produce waves in the air which extend to the drum of the ear and shake that, and we feel what we call sound. Short, light strings make quick small vibrations, which we call high sounds, though they are really no higher than the slow wide vibrations of a long heavy string. We merely call them high and low for convenience, or by association with the lines of the musical scale on which they are expressed in characters.—In wind instruments, like the organ, flute, horn, bugle, whistle, etc., we have a column or tube of confined air, which stands in place of the piano or violin string. We vibrate the air column by blowing across one end of it (not directly into it). In the flute for example, we make faster or slower vibrations or sound waves, (higher and lower we say,) by opening or shutting little holes along the tube to shorten or lengthen the air column, and this causes it to vibrate faster or slower.—Unstop the lower end of a whistle and put it into water an inch or two. The pressure of hard blowing drives the water down, and lengthens the air column and makes a lower sound. Bubbling the air out at the bottom interrupts the sound, making a trilling sound. The flowing in of the air shortens the tube and gives a more shrill sound. With a small long whistle, like one made of a goose-quill, one can, by a little practice, very nearly imitate a canary bird, or hobolink, etc.—Just now there are along our city streets many venders of little glass tube bird whistles, like our engraving, or a little larger. The whistling part is made with a beveled cork just above the hole in the middle. It is used with the lower end in a tumbler or cup of water. The upper end is long for convenience, but this is not necessary. Any small whistle the boys can make will answer if the lower end be left open. Different sizes and lengths give different sounds. One the size of a small goose-quill gives the best canary-bird sounds,

The Prize Puzzles.

Several hundred contributions of puzzles, etc., in competition for the prizes offered have been received, and considerable time will be required to decide upon their merits. This part of the paper is sent to press too early in the month to enable us in this number to announce the names of the successful competitors. It will be done in June, when we expect also to publish one or more of the best puzzles.

Answers to Problems and Puzzles.

The following are answers to the puzzles, etc., in the April number, page 149. No. 202. The Silver Puzzle.—Gently scratch on the table cloth in front of the coin to be removed, and three or four inches from it; it will be gradually moved out from under the tumbler. No. 203. Bible Questions.—1, The ark was three hundred cubits long. 2, Zeruiah was mother to Joab. (Query.—Why was her name mentioned, when, in Bible history, the name of the father is usually given?) No. 204. Mathematical Problem.—By an oversight this problem has been inserted twice. The answer is found on page 107. No. 205. Illustrated Rebus.—"To many wealth would only add evil, but only few refrain from its pursuit."

The following have sent in correct answers up to the date of April 5th, when this page must go to press. Arthene A. Bush, Lillie K. Blunt, Josiah W. Winslow, Moses R. Gochnour, J. K. Maritz, C. H. Davis, Henry P. Armsby, Chas. H. Thorp, Wm. H. Cusack, Jennie Bay, Mary N. Charlton, Annie H. Charlton, J. H. Hoff, P. D. Putnam, W. H. Straub, Frank B. Bourne, Mattie J. Nesbitt, Lloyd T. English, Helen M. Hunter, A. H. Carter, Fred. Husted, Willie R. Balch, John S. Adelsberger, Mollie Reid, Sylvester W. Peters, Cornelius Houglund, Jr., W. L. Reed, Harvey Bell, J. C. Bell, Theo. W. Fowler, "Abraham," Howard Co., Ind., Alice Harriet Hascall, J. G. Berry, Franklin D. Hotchkiss, Mary M. Barker, Andrew Jackson, W. Wilson, Will Fair, Francis Whitney, Egbert Benjamin, Charles Talcott, T. L. Norton, Frank A. Morris, "Portland," West Va., Francis L. Hine, Amelia Wright, "Western Calculator," D. Wiley Miller, Flathush Winthrop, Augustus J. Tucker, Frank Curtiss, E. K. Northup, Fannie T. Cole, J. C. and A. M. Barnard, E. L. Bonton, J. A. Patterson, James Diltz, Abby Hurd, G. W. Freese, Warren Davis, Thos. H. McMullin, Maria Loomis, J. Henry, Edwin Andrews, H. Martin Kellog, Theodore A. Funk, C. W. Curtis, Walter T. Jones, Edward and Elizabeth, J. A. Ross, George S. Coover, Frank W. Sawin, Thos. P. Crane, Joseph Woodroffe, G. T. Reeves, George W. Mouse, "D. L.," G. W. Littlefield, Geo. W. Sibley, J. Rosentiel, John T. Yarrington, Edwin A. Shepard, Alfred G. Nason, Emma J. Nettleton, Hattie M. B. McIntosh, John Y. Shindel, Antin Leonard, Millie Minden, John Savage, N. Gager, Minard R. Bice, Silas Bice, Storrs Barrows, Jr., B. Frank Hull, Olive Bacon, E. W. Day, Henry Fairwell, Jonathan H. Lindsey, George F. Weeks, Mollie A. Rorer, Bayard W. Purcell, Lois D. Green, P. Jansen, M. T. Haines, Sallie Bonsall, A. W. Kapo, Mark McMarran, S. Lockwood, Lottie C. Fox, Chas. D. Sutton, Alonzo P. Charlton, Thos. Benton, William Millard, W. H. Kenneby, Theodore A. Funk, Sarah B. Pullman, Mrs. J. S. Coles, J. S. Siles, L. B. and C. H. Augustein, Ellen A. Carpenter, Wm. Van Slyke, S. Hitch, William Damon, Martha Denniston, E. B. Messmer, H. L. Drachir, B. H. Chapman, Fannie Goff, John Goff, Mrs. C. C. Corbett, Sarah L. Goff, Nathaniel Edwards, L. M. Kirk, Lizzie Laughlin, J. W. Price, James E. Eshleman, Samuel N. Stubbs, Bayard W. Purcell, S. P. and O. S. Flanders, Franklin Fox, Herbert F. Robinson, May E. Whiting, Belle S. Ward, John W. Stimmler.

New Puzzles to be Answered.

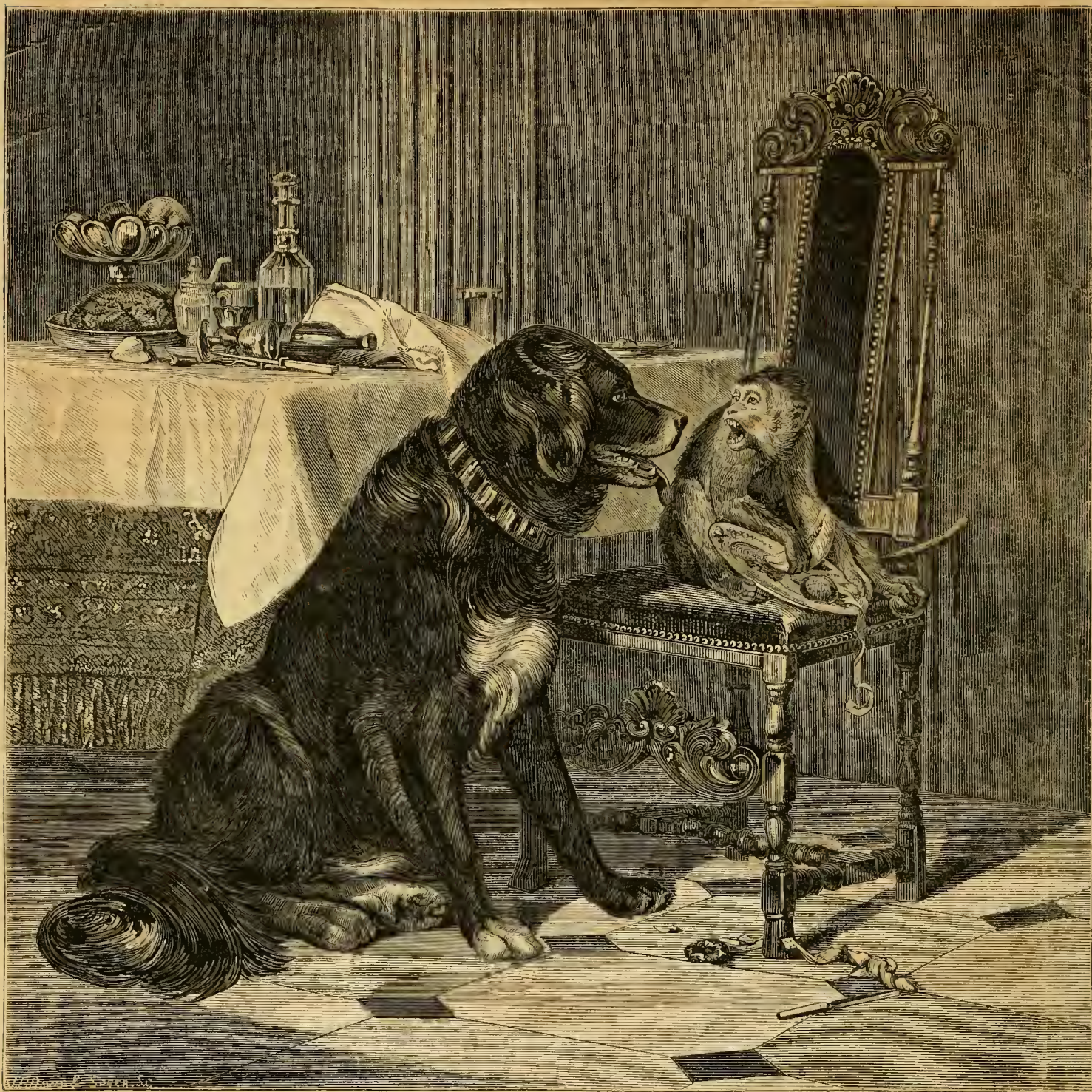
No. 206. Enigma.—My whole is my second, and with it I made my first. What is the word?



No. 207. Illustrated Rebus.—Very good advice.

No. 208. Conundrums.—1. When are two kings like three miles? 2. Why is a butcher like a bold thief? 3. Why are the stars like old astronomers?

No. 209.—PRSVRYPREFTMNVKPTHTSPRCPT STN is inscribed under the commandments. In the channel of a church in England, and only one letter is wanting to make good English of it. The letter is to be used as often as needed. What is the letter, and what will it read?



AFTER DINNER. — FROM A PAINTING BY MEYERHEIM, BERLIN. — Engraved for the American Agriculturist.

Here is an easy lesson for girls and boys to study, though it may be a hard one for some to learn. The picture shows a hateful little monkey, and a noble looking Newfoundland dog. As they are only animals, we can talk very freely about them, and probably hurt nobody's feelings. If it were the picture of boys or girls, one of them showing selfishness, distrust, and spite, the other good nature, kindness, and confidence, then George or Susan, or Henry, might think we were showing their faults or their virtues to the rest of our great family. "What does distrust mean?" asks little Fanny. To be afraid of another without any good reason for it. Selfish people are almost always distrustful. The picture of the monkey shows how unlovely such a feeling is. His feelings come out into his face, and make it hideous. Depend upon it, that monkey has not been well educated; probably he is a pet, accustomed to have his own way, and that you know is enough to spoil any little monkey! But there is something on the table that may partly account for his ill-nature. Perhaps he has been tasting some of the drinks from the bottles as well as stealing a plate of fruit—one of the bottles is upset and empty—that might be enough to spoil even a pleasant animal. You

can see that the dog is too trusty to take anything from the table, however tempting to his palate. He is honest, as well as kind, and you may be sure he would trust his companions if they were worthy. *He suspects no evil because he is innocent.* That is a good lesson to learn by heart, and we think no pleasanter way of studying it can be found than by examining the above beautiful picture.

About Gold Leaf and Gold Beaters.

Our youthful readers, who have all seen the gilding on the backs of books, may like to know how it gets there. A little piece of gold is made into a very thin sheet, by passing it many times between steel rollers—so thin that 800 of the sheets would only make one inch in thickness. These are cut into about inch square pieces, which are then placed between layers of thin vellum, or "gold beaters' skin," as it is called, made from the intestines of oxen. These are 4 or 5 inches square, with the inch squares of gold sheet between them. A pile of 100 to 150 layers is made. The beater with a convex face, heavy hammer, beats away at this pile for hours, part of the time with the right and part with the left hand to rest each. The gold spreads out into sheets as large as the vellum.

The thin leaves of gold are then taken out and each piece is cut into four squares, and a new pile made with these, and the beating repeated. They are then cut again, and the process repeated until the original thin sheet is spread out over hundreds of square inches, and the gold leaf is so thin that a million sheets piled up would not be more than five or six inches in thickness. These gold sheets are placed between the leaves of little paper books, 25 to the book, the edges trimmed to about 3 inches square, and they are then ready for sale. For filling teeth, and for plating metals, the gold leaf is left thicker. —To gild book covers, the binder puts a little sizing or glue, on the place where he wants the gilt letters or pictures, and spreads a piece of thin gold leaf over it. The type, or stamp, made of brass, or some metal that will not melt readily is then heated and pressed upon the gold leaf, which fastens it to the sized leather, or muslin book cover, wherever it is touched by the hot type or stamp. A sponge or cloth then rubbed over it takes off all the gold leaf not fixed by the hot metal, and leaves the distinct gilt letters, or other device. The edges of books are pared even and smoothed, then gold leaf is laid on and burnished or rubbed fast, with a smooth tool made for the purpose.

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[American Agriculturist, Jan. 1865.]

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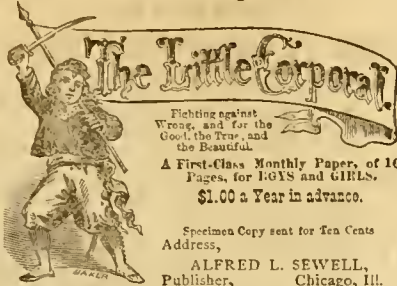
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Commercial Matters—Market Prices.

The following condensed, comprehensive tables, carefully prepared specially for the *American Agriculturist*, show at a glance the transactions for a month, ending April 14, 1866, and the exports of Breadstuffs from this port thus far, since January 1:

TRANSACTIONS AT THE NEW-YORK MARKETS.						
RECEIPTS.	Flour.	Wheat.	Corn.	Rye.	Barley.	Oats.
24 days this m'th.	167,500	9,890	58,000	4,100	134,000	117,000
24 days last m'th.	117,000	13,700	161,000	8,400	93,000	131,000
SALES.						
24 days this month.	218,500	390,000	1,418,000	137,000	374,000	
24 days last month.	261,000	617,000	954,000	189,900	181,000	
2. Comparison with same period at this time last year.						
RECEIPTS.	Flour.	Wheat.	Corn.	Rye.	Barley.	Oats.
24 days 1865.....	167,500	9,890	58,000	4,100	134,000	117,000
24 days 1866.....	197,000	9,200	173,000	3,100	94,000	286,000
SALES.						
24 days 1865.....	218,500	390,000	1,418,000	137,000	374,000	
24 days 1866.....	194,000	528,000	318,000		46,000	
3. Exports from New-York, January 1 to March 15:						
	Flour.	Wheat.	Corn.	Rye.	Oats.	
1866.....	233,445	100,467	1,824,213	125,263	566,000	
1865.....	333,390	135,701	129,749	141	24,302	

Gold fell to 125, rallied again to 125½, and is now 125¾. There has been a better inquiry for the principal Breadstuffs during a month, and holders not eager to realize, especially on sound flour and grain. The home trade have been the principal buyers of flour and wheat, which has been held above the limits of foreign orders. There has been a good export inquiry for Corn and Rye, and for Oats, for shipment to London. Unsound Wheat, Corn, and Oats continue to arrive most freely at the seaboard, though in little favor. River and lake navigation is now fully resumed, and the canals of this State will probably be in working order by May 1st. There has been more doing in Provisions at irregular prices for hog products, but at firmer rates for beef, beef hams, butter, and cheese, the last two articles closing heavily, under freer arrivals. New butter is coming in pretty freely, and is tending downward. The consumption is much restricted by the high rates. Cotton has been in good supply and less request, middlings receded, at one time, to 35¢ 37¢, but have since rallied to 37¢ 38¢, per lb. The estimated stock now here is 223,000 bales. The trade in Wool has been on a very limited scale, though prices have favored buyers, decide liv. The demand has been exclusively for manufacturing purposes, and has been confined to small lots. Hay and Straw have been more freely offered at lower prices, but have not been in much request, save for local use. Hops and Seeds have been in fair demand, and generally buoyant in price. Tobacco has been quiet and depressed.

CURRENT WHOLESALE PRICES.

	March 15.	April 15.
PRICE OF GOLD.	139½	125½
Flour—Super to Extra State	\$6 75 @ 8 25	\$6 50 @ 8 30
Super to Extra Southern	8 00 @ 10 50	9 00 @ 10 50
Extra Western	7 35 @ 10 50	7 45 @ 10 50
Extra Genesee	8 25 @ 11 75	8 40 @ 12 00
Superfine Western	6 70 @ 7 30	6 80 @ 7 30
RYE FLOUR	4 50 @ 5 50	4 25 @ 5 25
CORN MEAL	3 50 @ 4 15	3 50 @ 4 15
WHEAT—All kinds of White	2 00 @ 2 65	2 00 @ 2 75
All kinds of Red and Amber	1 50 @ 2 45	1 55 @ 2 45
CORN—Yellow	75 @ 80	80 @ 85
Mixed	60 @ 77	80 @ 85
OATS—Western	55 @ 55	40 @ 58
State	54 @ 56	60 @ 62
RYE	72 @ 1 00	60 @ 80
BARLEY	65 @ 85	85 @ 1 20
HAY—Bale of 100 lb.	80 @ 1 05	50 @ 70
Loose	85 @ 1 10	55 @ 80
STRAW, of 100 lb.	65 @ 1 20	55 @ 1 00
COTTON—Middlings, of 40	40 @ 42	37 @ 80
HOPS—Crop of 1866, of 40	25 @ 70	25 @ 65
FEATHERS—Live Geese, of 40	45 @ 1 15	50 @ 70
SEED—Clover, of 40	9½ @ 10½	9 @ 11½
Timothy, of bushel	3 25 @ 3 75	4 50 @ 5 20
Flax, of bushel	2 55 @ 2 85	2 40 @ 2 65
SUGAR—Brown, of 10	10 @ 14	9½ @ 13½
MOLASSES, Cuba, of 40	37½ @ 52½	35 @ 53
COFFEE—Rio, (Gold Price) of 20	17 @ 21	17 @ 21
Tobacco, Kentucky, &c., of 40	6 @ 10	5 @ 10
Seed Leaf, of 40	6 @ 10	5 @ 10
Wool—D. mestic Fleeced, of 40	45 @ 77	42½ @ 75
Domestic, pulled, of 40	37½ @ 65	39 @ 65
California, unwashed, of 40	18 @ 40	20 @ 40
TALLOW, of 40	11½ @ 12	11½ @ 11½
OLD CASK—of 40	44 @ 48 00	43 00 @ 48 00
PORK—Mess, of barrel	25 00 @ 25 75	25 56 @ 25 75
Prime, of barrel	21 00 @ 21 50	21 25 @ 22 00
BEEF—Plain mess, of barrel	15 50 @ 19 50	15 50 @ 19 50
LARD, in barrels, of 40	16½ @ 18½	16½ @ 18½
BUTTER—Western, of 40	23 @ 45	25 @ 45
State, of 40	16 @ 60	40 @ 60
CHICKEN	16 @ 22	16 @ 22
BEANS—of bushel	1 50 @ 2 50	1 25 @ 2 50
PEAS—Canada, of bushel	1 31 @ 1 85	1 20 @ 1 25
Eggs—Fresh, of dozen	21 @ 27	26 @ 29
POULTRY—Fowls, of 40	18 @ 20	21 @ 30
Turkeys, of 40	20 @ 32	27 @ 31
POTATOES—Merceds, of bbl.	2 00 @ 2 87	2 50 @ 3 25
Peach Blows, of barrel	2 00 @ 2 75	2 75 @ 3 00
Buckeyes—New, of barrel	1 25 @ 1 50	1 75 @ 3 00
APPLES—of barrel	2 00 @ 6 00	2 00 @ 7 00

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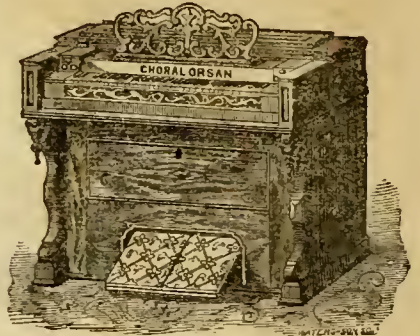
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With Pedal Bass and larger compass, up to	800

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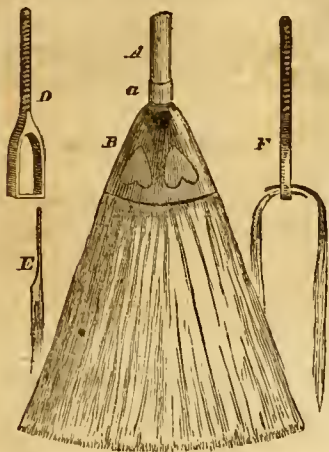
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St. George's Rectory, April 5th, 1866.

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Cures SCAR, TICKS and LICE on SHEEP or CATTLE, adds over a pound of wool to the fleece, improves its quality, and adds to the general health of the sheep, without danger from taking cold.

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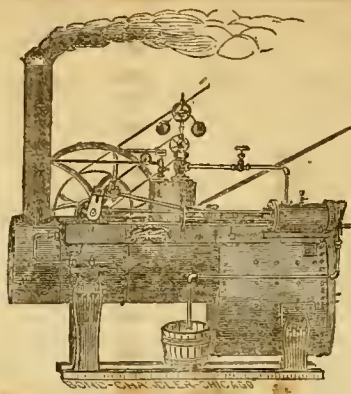
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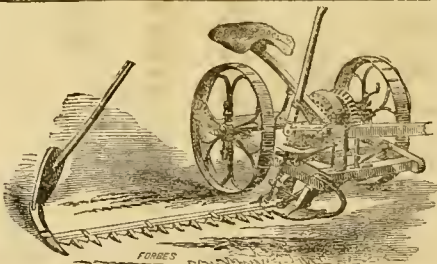
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AGENTS wanted to sell the Union Mower, Clement's Hay Fork, Whitcomb's Hay Rake, Share's Harrow, &c

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The Jersey

POWER APPLE GRINDER.

(BUTTERWORTH'S PATENT.)

For grinding Apples, Peaches and other kinds of fruit. This Machine has been thoroughly tried in different sections of the country, and is warranted to be, both in point of economy and durability, greatly superior to every other kind of Cider Mill.

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HANSON'S

Self-Acting Pressure Pump.

For raising water to the upper stories of city houses, where the pressure is not sufficient, and is worked by the water that is drawn in the basement, requiring no attention except a few drops of oil once a week.—This Pump can be used to great advantage in the country, where there is a small running stream not sufficient to supply a Ram, but will work with any quantity applied, and will raise its proportion to heights required, the greater the fall, the greater the proportion raised, it will also raise spring water by the use of brook water. The working parts of this machine are made of brass, consequently will not rust, and may be left unworked for any length of time without detriment. For further particulars send for Catalogue, or apply to the inventor and patentee,
THOS. HANSON, 291 Pearl-st.,
3 doors above Beckman-st., New York.

Also an assortment of Brass Force Pumps for Green-houses, &c., &c.

MEAD'S PATENT CONICAL PLOW.

The Conical is undoubtedly the best Plow for all kinds of work, that has ever been offered to the Public, and we are now prepared to furnish them to Farmers and the Trade at same prices that much poorer ones are offered, and warrant them in every particular. Send for a Price List.

W. E. BARKETT & CO., Providence, R. I.

HORSE RAKE WIRE

Of best quality and lowest rates, for sale by

JOHN W. QUINCY,
93 William-st., New York.

Fairchild's Patent Corn and Pumpkin Seed Planter.



This machine is a perfect success, and should not be judged by others, that have failed to give satisfaction. It plants corn and pumpkin seed, both at the same time if desired, or either separately, and will also plant beans, doing its work evenly as though by hand, and leaving the seed covered. It can be altered to plant more, or less seed in a hill, as may be desired, and will do the work of three or four men. Being made of Iron and Steel, it is very durable, and will work in stony soil without receiving injury. It will not clog, or get out of order, and is free from the objections of other machines, of which any one will be satisfied on examination. No farmer can afford to do without it, as it saves three-fourths the labor of planting; and the use of it for one season will more than repay its cost. It weighs 6½ pounds, and costs but \$8, if purchased directly of the makers, PORTER, DELONG & CO., Binghamton, N. Y., or, VAN NOSTRAND & LYON, 119 Nassau-st., New York.

GALVANIZED WIRE

FOR GRAPE ARBORS, FENCES, TRAINING FLOWERS AND VINES. Also Small Staples, Nails, &c. These are always clean, do not soil the hands, or rust and stain the painted woodwork, for sale by **LEFFERTS & CO.,** 100 Beekman-st., New York.

All kinds of Iron Work Galvanized to order and promptly returned, galvanized sheet iron of all sizes constantly on hand.

Gibboud Bro.'s Magic Grain Binder,

for binding Wheat, Rye, Oats, Corn Stalks, &c. With this Binder one man can do the work of two, and it is also a great saving in grain. Price in large quantities \$1.25 per 100. A sample and Circular with particulars will be sent to any one sending us 15 cents. Send early that your orders may be filled in time for harvest. Address **GIBBOUD BROS.,** Waterbury, Conn.

Valuable Patent for Sale.

The entire patent for the U. S. of Halsted's Improved Horse Hay Fork. Already successfully introduced, and selling well. For particulars address **A. M. HALSTED,** 63 Pearl-st., New York.

Bloomington Nursery, 240 Acres! 14th Year!

Apple, 1 and 2 year, also 1st class 3 to 5 year Standard Apple; Dwarf Apple; Standard and Dwarf Pear, Plum, Cherry, Hale's Early Peach, Apricot, Mulberries, Currants, Gooseberry, Kiftatinny, and other Blackberries, Iona, Israella, Adirondac, with general assortment of Grapes. Apple and Pear Root Grafts, Nursery Stocks, Clons, Cuttings, &c., &c. Osage Orange, fine 1 year, Wholesale and Retail. Potatoes—Cuzco, Garnet Chili, Pinkeye Instycoat, also Calico, Early Goodrich, Gleason—Evergreens, very large stock, mostly medium and small sizes—Ornamental Trees and Shrubs, Roses, the very largest and best assortment we know of, over 600 varieties—Dahlias, Lilies, Gladioli, Tuberoses, Pansies—Green-House and Bedding Plants—Having Eight large Houses we can furnish a Splendid Floral Collection. Send 2 Red Stamps for Catalogues. Address

F. K. PHENIX,
Bloomington, Illinois.

Adirondac Grape Nursery and Vineyard.

Wholesale and retail. We can furnish superior Vines in large quantities to the trade, of the following: Adirondac, Allen's Hybrid, Concord, Creveling, Cayahoga, Delaware, Diana, Hartford Prolific, Iona, Israella, Maxatany, Miles, Northern Muscadine, Rebecca, Rogers' Hybrids, Sherman and Union Village. Also the best Foreign Varieties, carefully packed and forwarded by Express, or by Mail, pre-paid. Send for Descriptive and Priced Catalogue.

JOHN W. BAILEY & CO.,
Plattsburgh, N. Y.

Feb. 1st, 1866.

VINES BY MAIL.

I shall endeavor to fill all the orders that have been sent to me this season, I have not advertised for the reason that my stock was exhausted in the fall. My preparations are very extensive for a large crop of vines for next fall, especially Concord layers (three acres). **J. H. FOSTER, Jr.,** Box 660, West Newton, Westmoreland Co., Pa.

3000 Standard Pear Trees, 2 years, \$35 per 100.

2000 Agriculturist Strawberry, \$4 per 100.

5000 Triomphe de Gand, \$1 per 100.

BENJ. HAINES, 27 Courtlandt-st., New York.

CHINESE SUGAR CANE.

Imported Seed.

In consequence of so much of the seed of this valuable plant that is raised in this country being deteriorated by hybridization with other varieties, we have just imported a supply from Messrs. Vihoria & Co., of Paris, grown from the original stock, which may be relied upon as perfectly pure. It will be mailed to any address post-paid, at the following rates: 4 ounces, 25 cents; 8 ounces, 40 cents; one pound, 75 cents. Address **B. K. BLISS,** Springfield, Mass.

EXTRA ORANGE CARROT.

This variety originated in this country several years since, and is rapidly gaining favor wherever known, and is now almost the only variety grown by farmers in this section. It resembles the "Long Orange" in shape, but is superior to it in every respect, being larger, better flavored, of a deeper orange color, and more sure to produce a crop. Post-paid by mail as follows: 4 ounces, 50 cents; 8 ounces, 80 cents; one pound, \$1.50. Address **B. K. BLISS,** Springfield, Mass.

A NEW FORAGE PLANT.

Bromus Schraderi.—A new forage plant from Australia, particularly recommended for resisting the drouth better than any other variety, and will thrive on any soil except where there is superabundance of moisture, yields two good crops in a season, and is much liked by cattle who will walk over everything else to reach it, and will eat it down as close as they can bite. One ounce packet for trial, 25 cents. Per pound, \$2.50. **B. K. BLISS,** Springfield, Mass.

OSAGE ORANGE SEED.

A fresh supply just arrived from Texas, \$2 per quart, by mail, \$2.25. **B. K. BLISS,** Springfield, Mass.

First Class Osage Orange Hedge Plants,

Wholesale and Retail. Fruit Trees, Evergreens, Shade Trees, large and small sizes, Wilson's Early Blackberry, Dahlias, Gladioli, Tuberoses, New Roses. Send red stamp for Greenhouse and Bedding Plant Catalogue, just issued. **F. K. PHENIX,** Bloomington, Ill.



Nansemond Sweet Potato Plants.

Of best quality, during May and June. Put up to carry safely long distances. Price, 500, \$2.25; 1000, \$2.50; 5000, \$15.00; 10,000, \$28.00. This variety is successfully grown at the North. Send for our Circular of directions, etc. Address

Murray & Co.,

Fosters Crossings,
Warren Co., Ohio.

SWEET POTATO PLANTS safely packed and delivered in New York at \$4 per thousand.—For 500 plants, \$2.50. **P. PHILLIPS,** Matawan, Monmouth Co., N. J.

LINNEUS RHUBARB.—5000 Plants, \$10 to \$15 per 100. Very fine. Warranted true. Address **A. M. HALSTED,** 63 Pearl-st., New York.

CRANBERRY PLANTS IN ANY QUANTITY. (the best of bearers, largest and earliest. Samples of fruit and vines can be seen at 41 Park Row, N. Y., price \$4 to \$7 per bbl., and \$3 to \$1 per M. Dr. B. H. STEVENS, Essex, Ct.)

EVERGREEN TREES BY MAIL.

One year Scotch Pine, mail free for \$2.50 per 100; \$10 per 500. **THOMAS MEEHAN,** Germantown, Pa.

PLANTS AND BULBS

BY MAIL.

For the prices named I will send to any address, post-paid, the following named varieties, from my collection, which I believe is now by far the largest in the country.

Antirrhinum, 12 distinct varieties.....	cts. pr doz.	30	\$3.00
Bonvardias, 3 distinct varieties.....	cts. pr set.	30	75
Cape Jessamines, 3 distinct varieties.....	cts. pr set.	30	75
Carnations, Monthly, 50 distinct varieties.....	cts. pr doz.	30	\$2.00
Chrysanthemums, 100 distinct varieties.....	cts. pr doz.	25	\$2.50
Dahlias, 100 distinct varieties.....	cts. pr doz.	50	\$3.00
Daphne Cneorum, (fragrant hardy Shrub).....	cts. pr doz.	30	\$3.00
Fuchsias, 25 distinct sorts.....	cts. pr set.	30	\$3.00
Geraniums (Gold and Silver leaved), 7 sorts.....	cts. pr doz.	50	\$3.00
Gladioli, 50 varieties, mixed.....	cts. pr doz.	25	\$2.00
Hellebores, 12 varieties, mixed.....	cts. pr doz.	25	\$2.00
Lantanas, 24 distinct varieties.....	cts. pr doz.	30	\$3.00
Pelargoniums, 30 distinct varieties.....	cts. pr doz.	50	\$1.50
Petunias, 12 distinct (double) varieties.....	cts. pr doz.	50	\$1.50
Phlox, Hardy, 50 distinct varieties.....	cts. pr doz.	25	\$2.50
Pansies, 100 distinct varieties.....	cts. pr doz.	15	\$1.00
Tuberoses (with Essay on Cultivation).....	cts. pr doz.	15	\$1.50
Verbenas, 100 superb varieties.....	cts. pr doz.	15	\$1.25

THE NEW PLANTS OF 1866.

Achyranthis Verschaffeltii, New White Pink "Sarah Howard," Double Petunia "President Lincoln," Antirrhinum "Silver Belt," Lobelia Snowflake, and Geranium Cloth of Gold, \$1.00 each, or \$1.00 for the six varieties. See descriptions in Catalogue. Large orders sent by Express. Samples at Seed Store, 67 Nassau-st., New York.

PETER HENDERSON, South Bergen, N. J.

ROSES FOR NURSERYMEN.

We offer Hybrid Perpetual Roses in 2½ to 3 inch pots, deliverable the last of May, at the following low prices: \$20 per 100; \$150 per 1000.

The right to control selection of sorts, reserved. The assortment will include all the best kinds, with many new varieties. **PARSONS & CO.,** Flushing, N. Y.

Superb Flowering Plants---By Mail.

On receipt of price, the following will be forwarded, post-age paid, perfectly protected, in boxes made for the purpose. Being on the line of the Camden and Amboy R. R., a package by the afternoon mail would reach a point 200 or 300 miles distant early next morning.

12 Verbenas, most brilliant varieties, \$1.50.
6 Monthly Carnations, very finest, 1.50.
Any of the following will be sent at \$2.25 a dozen.
SCARLET GERANIUMS.—CHRYSANTHEMUMS, very finest, large and small.—HELLEBORES, 12 varieties.—FUCHSIAS, best single and double.—PETUNIAS, very showy.—SALVIA, several kinds.—ACERATUM, the plain, and the variegated.—BALIS, sweet scented; leaves variegated green and gold. Hardy.—LANTANAS, all the most brilliant.—PANSIES, beautifully marked.—VIOLETS, single and double.—LOBELIAS, very fine for bedding.—VERONICAS.

Double Tuberoses, all flowering, 6 for \$1. Send your address distinctly to **GEORGE SUCH,** South Amboy, N. J.

Solanum Jasminoides.

For illustration and description, see Agriculturist for December, 1864. Rooted plants, price 50 cents each, or 3 for \$1.25. By mail, post-paid. **J. MASON, Agt.,** Sign of the "Good Samaritan," 42 State-st., Hartford, Conn.

WASHINGTON, March 14, 1866.
Sir,—Your plant arrived in perfect safety, and is now pushing out its new leaves in the sunshine in the office window. The Solanum came in better shape than any I ever received a plant before through the mail. **A. G. WILKINSON.**

GARDEN AND FLOWER SEEDS BY MAIL. Pre-paid, including all the really valuable old sorts with many new and fine varieties. Priced Catalogues will be sent to any address. Agents Wanted. **B. M. WILSON,** Old Colony Nurseries and Seed Establishment, Plymouth, Massachusetts.

The Xenia Green-House Stock,

embracing all varieties, native and exotic—and all the Nursery—are now offered at **Wholesale, 10 per cent less**, than the standard rates, East or West. To persons wishing to embark in the GREEN-HOUSE business, this presents rare inducements, and an eligible location! By the surviving partner, **J. S. WILSON,** Box 258, Xenia, Green Co., Ohio.

Strawberry Plants.

Great Agriculturist, the largest berry country, plants 12 for \$1; fifty for \$3; one hundred for \$3; or, \$40 per thousand. Monitor, Col. Elsworth, and Brooklyn Scarlet, \$1 per dozen, or \$3 per hundred. Miss Ida, \$2 per dozen. Mead's Seedling, \$3 per dozen. Green Prolific, \$1 per dozen; \$3 per hundred. Buffalo Seedling, \$1 per dozen; \$2 per hundred. Russell and French's Seedling, \$1 per hundred; \$8 per thousand, and 50 to any address. For particulars, see April No. of American Agriculturist. Strawberry plants may be safely set out up to the first of June. Address **W. M. S. CARPENTER,** 156 Reade-st., New York.

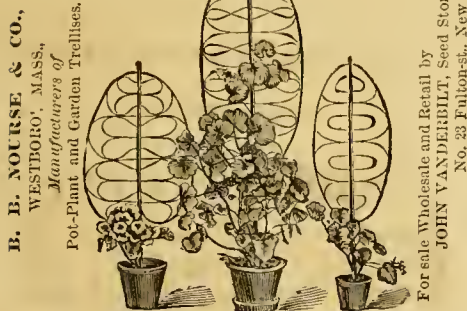
Connecticut Seed Leaf Tobacco Seed.

WARRANTED GENUINE. 1 ounce, 25 cents; 4 ounces, 75 cents; ¼ pound, \$1.25; 1 pound, \$2. By mail, post-paid. **J. MASON, Agt.,** Sign of the "Good Samaritan," 42 State-st., Hartford, Conn.

10,000 POUNDS CABBAGE, CARROT, Onion, Parsnip, Radish, Spinach, Turnip and all other desirable Garden Seeds, in large or small quantities. Also in Boxes. Wholesale and Retail Catalogues now ready. Agents Wanted. **B. M. WILSON,** Old Colony Nurseries and Seed Establishment, Plymouth, Mass.

Winningstadt Cabbage.

Plants 50 cents per 100; \$1 per 1000. **SAM'L L. ALLEN,** Cinnaminson, N. J.
SMALL AMERICAN EVERGREENS at Wholesale, by **A. P. CHAPMAN,** Tree Dealer, 111 Fulton-st., New York. Arbor Vite, 6 to 12 inches, \$5 per 1,000.

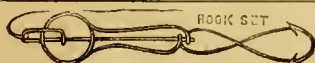


Portable Shelter Fence.

The attention of Farmers, Agricultural Societies, and Capitalists is respectfully invited to a simple, substantial and comparatively cheap Board Fence, convertible into a variety of neat, house-form, rain-proof Shelters, by simply doubling the panels together. A Fence in summer—a Shelter in winter. Great inducements offered to Clubs. Please send for illustrative Circular. **H. C. FOOTE,** 110 Broadway, Room No. 7, New York.

THE CELEBRATED COOK'S EVAPORATOR AND CANE MILLS, for sale by D. S. MESSLER. Sogro Hand Book sent free to all applicants.

D. S. MESSLER, Agent,
New Germantown, N. J.



PATENT "SNAP & CATCHER" FISH HOOK.—A perfect trap, springs open in the fish's mouth. Sports and Boys all want them. More Agents wanted. Send 30 cents and stamp for two sample Hooks, Terms and Trade Prices to **JOSEPH BRIGGS,** 335 Broadway, N. Y., also General Agent for the new **Patent Animal Fetters.**

Just what every farmer needs to restrain horses, mules and cattle, when turned out to pasture. Price \$2.00 each, \$18.00 per dozen. Orders promptly filled. Send stamp for Circular.

HORSE HOES.

We also manufacture Shares Patent Horse Hoes for the N. E. States. One season's trial will convince any Farmer that this is well worth the price of ten for working among Corn, Potatoes, and Root Crops. Send for Circular.

W E BARRITT & CO., Providence, R. I.

THE "AMERICAN BASKET CO.,"

OF NEW BRITAIN, CONN.,

Manufacture the best Market Basket for Strawberries, &c. Send for Circulars.

FARMERS RESIDING WHERE THERE IS NO Agent for the celebrated, silky, Spring Wire Tooth, **EAGLE HAY RAKE,** patented 1861, can obtain them direct from the Proprietor. Hundreds now in use. Operated by the right foot. No gearing, or hand work. Teeth never break. Simple, durable, perfect, and cheap. Circulars free. Address **S. L. JENNINGS,** Bridgeport, Conn.

ALL WISHING GOOD PLANTS see my advertisement in April No. of Agriculturist. **JOHN S. COLLINS,** Moorestown, Burlington Co., N. J.



DOTY'S
CLOTHES WASHER,
THE MOST POPULAR, BEST, AND
Cheapest Washing Machine
EVER INVENTED.

It is easy to operate, sitting or standing; takes but little room; injures no garments; finishes its work in from two to four minutes; is durable, convenient, and the only Washing Machine ever known that is **LIKED THE BETTER, THE LONGER IT IS USED.**

Recommended as the **Very Best** by Solon Robinson, Orange Judd, Prof. Youmans, and many other prominent men.

At the Great Fair of the American Institute, Oct., 1865, where all the principal Washers in the country were ably represented, it was awarded the **FIRST PREMIUM.**

On receipt of \$22 from places where no one is selling, we will send the Washer and the famous **Universal Clothes Wringer**, (and pay the freight if within 200 miles of New York.) The Washer alone will be sent for \$14. Wholesale Terms Circular sent free. Exclusive right of sale given to the first responsible applicant from each town.

R. C. BROWNING, General Agent,
32 Courtland-st., N. Y.
(Opposite Merchants Hotel.)

The Universal Clothes Wringer
WITH COG WHEELS



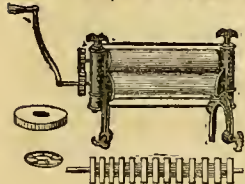
Has again taken the first premium at the great Fair of the American Institute; also at the State Fairs of New York, Vermont, Pennsylvania, New Jersey, Ohio, Indiana, Kentucky, Michigan, Illinois, and Iowa.

Over two hundred thousand have been sold, and every purchaser will testify that they save their cost in clothing every year, besides saving half the labor of wringing.

Send for Wholesale and Retail Terms Circular.

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32 Courtland-st., (opposite Merchants Hotel), N. Y.

PATENT CORK ROLLS!!!



THE PEOPLE'S CLOTHES WRINGER

Covered with Beautiful White Duck, the Best, the cheapest, and most durable. Cork Rolls, Cog Wheel, Galvanized Iron Frame. Depot of the Company, 494 Broadway, New-York. Price \$8.00. Agents and Shippers liberally dealt with. Send for Circular.

CHALLENGE WASHING MACHINE.

Warranted to Wash
EASIER, QUICKER AND BETTER,
and with LESS WEAR to the clothes than any other machine or process.

Warranted to wash
SIX SHEETS IN SEVEN MINUTES,
FOUR SHEETS IN FOUR MINUTES,
and other clothes in proportion.
Weights but 20 lbs. Costs but \$7 to \$9.
Sample machines sent on receipt of price, and money refunded if they fail to give

ENTIRE SATISFACTION.

Six Machines sent to one address for the price of five.
Challenge Wringer and Mangle,

OR
IRONING MACHINE IN ONE.

A PERFECT WRINGER.—Self-adjusting—Malleable Iron frame—White Rolls, and a

Perfect Ironing Machine

for ironing without heat, and as quickly as the articles would be run through a Wringer.

AGENTS WANTED everywhere.
Send enclosing Stamp for Circular, giving 1000 references and full description.

S. W. PALMER & CO., Auburn, N. Y.

American Roofing Company.

This **Roofing** is the lightest known, weighing *fourteen ounces* to the yard, yet is warranted permanent, and as tight as any **Roofing** ever made.

It rolls up and unrolls like Oil Cloth, is perfectly pliable and elastic in any weather, and is a **ready roofing**, furnished ready for use, and can be laid down by any sensible working man according to directions furnished by the undersigned.

It is not destroyed by putting down; when no longer required in one place, can be taken up and be put down elsewhere as good as new.

The **American Paint**, manufactured originally only for use on the **Patent Roofing**, has been tried extensively on other *Roofs*, and on *Walls, Fences, Cists and Cars*, and has given such extraordinary satisfaction, that it is now extensively sold for such purposes. It dries with a smooth, glossy surface, of a beautiful Maroon color, becomes very hard by exposure, and will not blister or crack either from heat or cold. Printed Circulars and other information can be obtained from

HENRY SMITH, Agent,
94 Wall-st., P. O. Box, 1313, New York.

HALESTED BROS & PUTNAM
68
Pearl-Street,
NEW-YORK.

Produce Commission Merchants,

FOR THE SALE OF

BUTTER, CHEESE, LARD, EGGS, PORK, HAMS, HOPS, APPLES, DRIED FRUITS, WOOL, BEANS, SEEDS, PLTRY, HONEY, GAME, &C., &C.

Send for WEEKLY PRICE CURRENT, Marking Plate and Circular with Packing and Shipping directions.

Country Consignments receive special attention.

REFERENCES:

Beal, Loder, Esq., N. Y. Hoa, J. K. Porter,
Ex-Prest, Erie R. R. Albany, N. Y.
Cragin & Co., N. Y. Wm. S. Thoro, Esq., N. Y.
and Chicago, Ill. Prest. Nat'l Fire Ins. Co.
King & Scott, Chicago, Ill. Lane, Son & Co., N. Y.
E. D. Hagerford, Burlington, Vt.

GUANO.

FARMERS, READ!

The Excelsior Poudrette and Fish Guano Works,
Office and Depot, 195 Water-st., New York.

RICARDO & CO., Proprietors.

We are making an *extra fine Improved* quality of **Poudrette** this season, composed of *Night Soil, Urine, Butcher's Blood, Offal, and Fish Guano*, and guarantee it *superior* in quality to any other Fertilizer in Market, and at a *much lower price*. Farmers and Gardeners, study your interest, and use it. Price \$2.00 per Barrel, and 33 cents per Bushel. Call and see us or send for a Circular. Address or call on

RICARDO & CO.,
195 Water-st., near Fulton, New York.

P. S.—Be sure you get the "EXCELSIOR." "DEWARE OF FRAUDS AND MISREPRESENTATIONS."

"GUANO."

No. 1 Peruvian Guano, also **Baker's Island** and other **Phosphate (Bone) Guanos** of the richest quality, genuine as imported, and pure article. Also **Manipulated Guano**, consisting of **No. 1 Peruvian** and **Baker's Island Guano**, making a very rich and substantial fertilizer. For sale in quantity to suit purchasers by

J. B. SARDY, 53 South st., cor. of Wall, New York,

(A fair deduction made to Dealers.)

For further particulars send for Circular.

AMMONIATED PACIFIC GUANO.

The attention of Farmers and Agriculturalists is called to this article, as superior to anything else offered in the market. Equal to Peruvian Guano, and costing much less.

We offer this fertilizer in lots to suit all purchasers. A liberal discount made to the Trade.

Pamphlets with copies of Analysis by Dr. Liebig, of Baltimore, and Dr. Jackson, Massachusetts State Assayer, and testimonials from Agriculturalists, showing its value, and directions for use, can be obtained from

J. O. BAKER & CO., SELLING AGENTS,
131 Pearl-st., New-York.

THE
BRUCE'S CONCENTRATED
FERTILIZER.

Made by Mr. Duncan Bruce, is for sale to the Trade, by
GEO. E. WHITE & CO., 55 Cliff-st., New York.

BONE

For Sale by the Manufacturers. Pure Bone Dust and Fresh Bone Superphosphate of Lime. Address

A. LISTER & BROTHER,
Ceres Mills, Newark, N. J.

TO FARMERS.
Poudrette! Poudrette!

80,000 Barrels of Lodi Poudrette



For sale in lots to suit purchasers. This **Poudrette** has been on the market for 25 years, and has held its place among all other fertilizers as the **Best and Cheapest**, being sold for \$40 per ton less than other fertilizers, with just as good results. It is manufactured from the night soil of New York City, which the subscribers have the exclusive contract for removing to their works. Its chief recommendations are its economy, the quick growth it gives to the plant, ripening a crop from two to three weeks earlier, and an increased yield of 50 to 100 per cent. It is used most extensively upon Corn, Tobacco, Potatoes, and Garden Vegetables. Is perfectly inodorous, harmless to vegetation, can be applied directly to the seed without injury, and yet is as powerful as Peruvian Guano, and unlike Guano, does not leave the soil in an exhausted condition. A pamphlet with the experience in its use of several hundred farmers in different parts of the United States, some of them having used it for over 20 years, will be sent to any person applying to our address.

Price—\$2.00 per Barrel of four Bushels. Address
THE LODI MANUFACTURING COMPANY,
66 Courtland-st., New-York.

THE BEST FERTILIZER.

The Rumford Chemical Works offer for sale, 1,200 tons of **Wilson's Patent Ammoniated Superphosphate of Lime**. This valuable Fertilizer is made entirely from bone, and nitrogenous substances, and oil of vitriol, and is compounded from them in such proportions as to make the best possible Fertilizer.

Orders from any part of the country, except Maryland, for any quantity, will be promptly filled, if accompanied with the money, or satisfactory references.

Citizens of Maryland should address their orders to Hon. Robert Turner, Baltimore.

This Fertilizer always produces superior crops of Grass, Corn, Wheat, Oats, Barley, Rye, and Buckwheat, of Potatoes, Turnips, and Beets, and is most excellent for Trees, Shrubs, and Vines.

Price at the Works, for 10 Tons, or less, \$60 per Ton. A liberal discount to dealers.

GEO. F. WILSON, Treasurer,
Nos. 53, 59 and 60 South Water-st.,
Providence, R. I.

H. B. LANE, 151 Nassau-st., Agent in New York City.



BONE TA-FEU!!

It is manufactured for and used as a substitute for Peruvian guano, and judged by many to be fully equal to it. It is sold at the low price of \$40 per Ton.

Manufactured only by the
LODI MANUFACTURING COMPANY,
66 Courtland-st., New York,
to whom all orders must be addressed.

No. 1 Peruvian Guano,

of recent importations, for sale by

J. CHAPMAN & VANWYCK,

Maryland and Virginia Farms for Sale.

Owing to the Civil War, fine Southern farms are now offering for sale at reduced prices, in the most fertile portions of Maryland and Virginia. The mildness of the climate and variety of productions offer peculiar inducements to Northern Farmers.—The Subscribers have constantly on hand Farms improved and unimproved, Dairy, Fruit and Grazing Farms, Country Seats, Coal and Timber Lands, in all sections of Maryland and Virginia.

Also Residences and Building lots in and around Baltimore and Washington.

Faithful and accurate descriptions can be had by addressing

JOHN GLENN & CO.,
59 Second-st., Baltimore.

SUPERIOR FARM LAND.—20,000
Acres, Franklin Tract, at Newfield, Gloucester County, New Jersey, on the Railroad running from Philadelphia to Cape May, 30 miles South of Philadelphia—adjoining the Vineland Tract, and 2 miles North of the Vineland Station—for sale at low prices and on easy terms, in lots to suit purchasers. Circulars, with reports of Solon Robinson, Geo. William Parry, and others, with full information, sent to applicants, free. Address **JOHN H. COFFIN & CO., Newfield, Gloucester Co., N. J.** Improved Farms also for Sale.

600 Maryland and Virginia Farms and Timbered Lands.

Catalogue of Maryland and Virginia Lands, with Geographical description of Maryland, for sale by **R. W. TEMPLEMAN & CO., Land Agents, 37 Lexington-st., Baltimore City**, embracing a description of the soil and products of Maryland. Send 25 cents for a copy of Catalogue.

FOR SALE.—A NOBLE CHANCE TO CULTIVATE Cranberries; 30 Acres, with 20 inches of Peat, very easily cleared. fine stream of water running through it. Enough vines on the property to plant the whole. Price \$2,500. **J. H. COFFIN, Franklville, Gloucester Co., N. J.**

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
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
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THE CLUB

Per John M. Martin.

We append the second order from our Seville Club:

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VOLUME XXV—No. 6.

NEW-YORK, JUNE, 1866.

NEW SERIES—No. 233



THE "FIRST PROOF SHEET"—GUTTENBERG AND FAUST.—PAINTED BY HILLEMACHER.

"Proofs" are the first impressions which are taken from types after they are set up, so that the matter may be read, and corrections made, previous to printing. A *proof* was a great deal more than that at the moment selected by the artist for the above picture. Think, what were the first impressions of John Guttenberg and John Faust, in that rude printing office at Mentz, in 1450, on examining the *first proof-sheet taken from t-y-p-e-s*.—It was indeed a proof.—It assured them of success, of fame, of honor, and perhaps it showed them some dim foreshadowing of the results to the world of the art

of printing. Guttenberg, the poor mechanic with his great genius, had struggled along since 1438 alone, until he found in Faust a genial, appreciative, liberal patron. Faust's face glows with surprise, pleasure, and interest at the demonstration of the problem. To Guttenberg, however, it is the moment of modest triumph, the culmination of his hopes and labors. He offers to his friend and patron the proof that his claims are just. The lever that will move the world he places in his hands. Think of what this first "proof" meant. Yet with true inventive instinct Guttenberg apparently takes no

pride in it, but is intent on pointing out some little defect, and is already planning to do better. There are two other characters in the picture: one a sturdy laborer, who thinks "What fools there are in the world!" The other is Peter Schaeffer, the scribe, whose facility with the pen rendered him valuable to Guttenberg in selecting styles for his type, etc. He takes in the whole, and it was he who first cast metal in moulds to form type. Guttenberg first used *moveable* types of wood or metal, and made them up in forms for printing.—The above is from a fine engraving at Goupil's, on Broadway.

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AMERICAN AGRICULTURIST.

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Every year we wonder to see the effect of a few warm, moist days in June—things push forward their growth with such vigor—even the soil seems to teem with life. The air has lost that oppressive languor which it imparted during the first hot days, of spring, and now, though warmer, it, the rather, inspires us to work. There is work enough for man and beast. Farmers careful to take advantage of opportunities, are well ahead with their work, so that even if the corn has to be replanted to some extent, and other delays occur, they will be ready for the proper June work in its time.

The weather is at times cold and wet, for which there is at this time no remedy, but drainage at the proper season will place the soil out of danger from excess of water. At other times this month is a dry one, and now and then a June drouth is very disastrous. The remedy for this is deep working, and frequent stirring and pulverization of the surface. Almost every section of the country has its own tools for this work, and most of them answer a very good end. The desirable points being lightness, ease of handling, steadiness in the ground, and the cutting or stirring evenly the whole soil. For hoed crops, a small A-harrow, with plow handles does very well; or a larger one, with the front teeth taken out, to run astride the rows of corn, etc. Besides, one of the best ways to keep a crop from suffering from drouth, is to run a subsoil plow through near the rows, but not near enough to disturb them or their roots. For this purpose the Mole subsoil plow is the best. This goes by several names, Mapes', Knox's, etc., but it is a very old invention, and consists simply of a flat, wedge-shaped share, like a spear head driven through the ground, being attached to a plow beam by one or two standards, the steel ones are preferable.

Hints about Work.

At this time of the year, when the stock is chiefly in pasture, and the barns and granaries are comparatively empty, time should be taken for

A General Clearing out.—All the buildings should be swept out thoroughly, the hay, feed, etc., cleared out, and also all the scattered grain, with the insects it may contain, and the whole of the premises put in order for the reception of the new crops.

Old Hay ought not to be left to form the bottom of the mow, but put somewhere, where it can be got at conveniently at any time. At this time, also, do any necessary repairs of those parts which were covered up when much hay and grain were in store; and in rainy days

Repair the flooring to cattle stalls, etc., making sure that all liquid and solid manure shall be saved.

The Cattle in the pasture should be looked to daily, that they do not lack water, and good feed, and to see that none are ailing.

Pastures not in real good heart, may be greatly benefited at this season, by shutting the stock out of them for a few days, and giving them a light dressing of ashes, bonedust and plaster, or of good superphosphate or guano.

Sheep.—Look out for dogs—put poisoned meat about in the pastures near where the dogs would enter, if you suspect dogs of chasing and worrying them. The way to do it is this, take pieces of meat as large as a dog can easily swallow, run a knife blade half way through, and then pressing the meat so as to open the hole, drop into the center of the meat a few grains of the poison, 3 grains is enough. Let the doggist weigh out a few doses and put them in separate papers, one can readily guess near enough after that. It is policy to wash wool so as to get the dirt out, but not remove all the grease—thus the fleeces will weigh heavier, and so long as manufacturers will not discriminate between cleaned and half cleaned wool, it is not unfair. The best washing is done by washing some of the greasiest fleeces which are not very dirty, in

tubs, so that the water becomes quite soapy (they should first be wet so as to soak the fleece some time before washing). In this water other sheep may be washed, and almost the whole of the grease removed with comparative ease, the fleece being subsequently rinsed clean in pure water. This system of washing sheep affords a considerable quantity of very valuable manure in the water used, which may be applied by watering carts, or by being distributed upon the grass or other crops, by the pailful. See item in *Hints for Work*, last month, about shearing sheep unwashed, ticks, etc.

Peas and Oats may be sown together any time during this month, using, on soil well prepared by repeated harrowings at intervals of several days, to kill weeds, about 2 bushels of each seed well mixed and drilled in deep: or, drill in the peas three inches deep and sow the oats broadcast and harrow them in the same way the drills run.

Millet, as a fodder crop, to cut before the seed ripens, is highly esteemed by many. The large kind is sowed in drills or broadcast, in good light soil. Weeds check its growth disastrously at its first starting, but if the ground can be stirred, it soon takes care of itself even in rather weedy soil. The small variety known as

Hungarian Grass, affords an abundant crop of good hay on land in good heart, and bears a drouth well. It should be cut soon after flowering, because the bristles, which surround the mature grain, produce bad effects in the stomachs of horses and perhaps other stock, which gives this fodder a bad reputation. Sow after the middle of June, employing the previous time to clear the ground of weeds, using about 1½ bushel (20 to 24 lbs.) of the seed to the acre, and brushing it in if the ground is not very dry, in which case it should be lightly harrowed. It is valuable to cut green.

Butter.—The secret of making good butter is cleanliness and thoroughness, and the time for the most profitable exercise of the art of buttermaking is June. The grass is abundant, the cows in full milk, the weather favorable. The milk should not be kept too cool, though this is rarely a fault in dairies. It is enough if it be kept as cool as 60° Fahrenheit, though 55° is not too cool. Cream will rise at about this temperature better than at any other, and the same is best at which to churn. Milk should stand where the air is sweet and fresh, odors from the kitchen or from the stable, or odors of any kind, indeed, except that of fresh air, should be carefully excluded. Stone floors are desirable, for these can be kept constantly moist and so cooler than others, and the air ought to circulate freely over and under the pans. Shallow pans are better than deep ones. Work out the buttermilk without touching the hands to the butter, using as little water as possible, or none at all. If the buttermilk is all out, and with it all the milk, sugar and cheesy portions of the milk, butter will keep with very little salt. The more imperfect the working, the more salt is required. In keeping cream several days, put it where the temperature will be uniform and cool, and stir well if more is added.

Beans.—The white field bean may be sown with profit any time during the month. Plant in drills 2 feet apart, the hills being a foot apart. The Blue Pod and White Marrow are the best, the latter ought not to be planted later than the 25th.

Fowls.—Give hens as much space as possible, if confined, throwing them fresh sods daily, as at this season grass will be a good part of their living. Provide clean gravel and lime, and a good dusting-box, and lime-wash the houses, nest-boxes and roosts frequently. A hen with chickens will do little scratching if each foot is tied up in a little bag or toe of an old stocking, and the brood will do much good in the garden.

Corn.—Much corn is not planted until the first week in June, and yet good crops are secured. If planted late, of course only the earliest maturing kinds should be used. In its cultivation horse power should take the place of the hand-hoe, as far as possible, and on many soils it will be found hardly necessary to hoe at all, if the horse cultivation be thorough, and the rows run both ways.

Corn Fodder.—Dry weather may suddenly cut short the pasturage, and without a good supply of corn fodder many a farmer would find his milk running very low. Corn should be sowed on ground in good heart, in drills 3 feet apart, manured in the drill with compost if need be. About 3 or 4 bushels is the usual seeding for an acre. The ground should be cultivated between the rows with a horse-hoe or cultivator once or twice.—

Sorghum may be used instead of corn, but it is not nearly so good. Still the seed costs much less.

Clover Seed.—Don't forget that red clover on good land, cut early, will produce a crop of seed as good, or better than you can buy. Cut before it would otherwise be best to do so,—early in June,—and leave the stubble even as possible. If you can put on a light dressing of fine manure and ashes compost, you will see the advantage in it.

Peas sowed after the 15th of May, north of latitude 41°, will be free from the Pea Weevil or Pea Bug. South of this latitude, peas sown earlier by several days or weeks, will usually be found free.

Root Crops.—We hope none of our readers will neglect to plant roots. Mangel wurtzels should have been planted in May, but will make a crop in good soil now. The soil for Rutabagas should be rich and mellow, and 200 or 300 pounds of a good Superphosphate, or an equal quantity of bonedust will do the crop nothing but good. Sow with a good drill 24 inches apart, and thin to a foot apart in the drills, or 16 inches in very rich land.

Cabbages do well on soil rich in organic matter, such as reclaimed swamps, in fact they will flourish on any rich soil. They need good previous tillage of the soil, and constant culture, that is, enough to secure an open, weedless soil so far as practicable. They take the place of roots perfectly in feeding, and impart but very little flavor to the milk, provided no decayed leaves are fed. The seed of the Drumhead, Flat Dutch, Mason, and other late sorts may be sowed now in seed beds, and by and by the plants set in the field 2 feet apart in rows, 30 inches to 3 feet apart according to the usual size of the variety. Cabbages produce an immense quantity of food per acre on good ground.—One great use of hoed crops is to destroy the

Weeds.—Very weedy land may be cleaned completely by diligently allowing no weeds to grow large, and frequently stirring the soil so as to cause new crops continually to sprout. Wet weather should be taken advantage of to

Pull deep-rooted Weeds both among grain and grass, where these crops can be entered without injury, and also in the corn field.

Tobacco.—Set plants about the 2nd and 3d week in June in this latitude, and northward. The soil must be rich, in good tilth, the rows 3 feet apart, and the plants 2½ feet in the rows. Shelter from the sun by dropping a little freshly mown grass upon the plants, keep close watch for grubs and cut worms, and reset as fast as plants fail, up to the second week in July.

Orchard and Nursery.

He who has planted trees has done well, but he who has watched them and cared for their early growth, has done better. There would be very little to be said about pruning, were the young trees properly looked after. The rubbing off of a superfluous bud here, pinching a rampant shoot there, and the judicious use of the pocket knife as occasion required, would soon put a young orchard in the way it should go. But as people will let trees have their own way until they need

Pruning, we are obliged to accept pruning, the cutting off of large limbs, as one of the operations that must be done. This and the next are the months in which to do it, as now in the growing season the wounds heal over "kindly." Never cut a limb from a tree unless something is to be gained by it. Indiscriminate hacking merely because it is the pruning season, is not to be commended. If the head is too crowded and there is not room for the light and air, thin it; if one branch grows so

near another as to chafe it, take it out; if the tree is disposed to grow one-sided, balance it. Use a saw with a wide "set," never an axe, though sometimes a heavy chisel driven up from below, will prove efficient. Leave a smooth cut, by paring carefully with knife or chisel if need be. The wound will heal over all the better if covered from the air. The old solution of shellac in alcohol is an excellent application, but the price of materials is too high to allow of their general use, and

Grafting Wax, applied warm with a brush, is a very useful substitute. One part tallow, two of wax, four of rosin, melted together and applied while warm, will answer the purpose. The composition may be made harder or softer by altering the proportion of tallow. In shaping

Young Trees, to form low heads, if only for the protection the overhanging branches afford to the trunk.

Grafts set this spring will now show whether they have "taken." In common cleft grafting there are usually two cions put in, but seldom more than one is needed. Cut off the superfluous one, and if the upper buds of the one allowed to grow are disposed to starve the lower ones, shorten them by pinching. In short, treat a graft as if it were a newly planted young tree. Keep the wax or clay closely applied, until the wound is well covered.

Insects will demand much of the attention of the fruit grower at this time. One of the most conspicuous of these is the Tent Caterpillar. If, as we advised in season, the eggs were looked for and removed, the number of tents will be sensibly less. We have probably a dozen letters giving the writers' method of treating this caterpillar; they all result in destroying the nest and killing the inhabitants. Kerosene on a swab, soft-soap on a swab and a torch of kerosene to burn them out are among the remedies proposed. As good a way as we have ever seen, is to pull off the nest and trample on it, wearing gloves if you are squeamish about caterpillars; or, if the nest is, as is often the case, on a small twig, cut it off, but don't omit the trampling. Fires in the orchard at night will attract and destroy many moths, and some place lamps or lanterns in large pans of water. The insects strike against the glass and fall into the water and are drowned. Now is the time to be on the guard against

Borers.—See article on page 187, May number.

Buds set last year will now be pushing a growth so vigorous, that there is great danger that it will be broken down by winds, or by its own weight. It should be tied to the stump of the stock left for that purpose, or if necessary to a stake. All

Suckers, whether they appear on budded, or grafted stocks, or on established trees, should be rubbed off when they first appear. If the

Black Knot appears on the plum or cherry tree, cut it off and burn it. This is a regular fungous growth and should not be laid to insects who have enough other mischief to answer for. It has been ignorantly charged to the account of the

Eureulio, which will perhaps deposit its eggs in it in default of finding fruit. Treat the eureulio in the only practical way. Jar every tree early in the morning, catch the insects that fall, upon a sheet, and burn them. As soon as the new growth of shrubs gets firm enough,

Layers may be made. Put the layer down in rich soil, and if at all disposed to dry out, cover the surface with a mulch of moss, or other material.

Seed-beds of fruit and other trees will need weeding, and thinning, and often, especially in the case of forest and evergreens, need shading. If seedling evergreens are disposed to damp off, sift over the bed an inch or so of dry sand.

Evergreens may still be transplanted, if the roots are properly kept from drying. They may also be pruned into shape. Always keep the upper branches from overhanging the lower. They bear the free cutting, and may be dwarfed or shaped at will. Clean culture is as necessary for shrubs and trees as for corn and potatoes, and pays as well, therefore destroy

Weeds, by the use of the cultivator, hoe, rake, or hand, weeding as circumstances require.

Kitchen Garden.

Most people have a time of "making garden," and then let the thing take its chances, and we often see a better crop of weeds than of anything else. In a well kept garden a weed is never allowed to get larger than can be killed by a rake. Much of the tillage may be done with a good steel rake frequently applied. Still, the hoe must be used, and in large gardens the horse cultivator kept moving between the rows. The time to perform these operations is just before the ground needs weeding. By working frequently early in the season, all the seeds of weeds that are near the surface, are made to germinate, and the young plants are destroyed. Those who have had their early plantings destroyed by cold rains, or who have neglected to sow many things they would like to have, should not let the lateness of the season deter them. There are but few things that will not make a crop if planted the first of June. Things that are soon over may have their duration much prolonged by sowing again.

Asparagus.—Do not continue the cutting too long. When peas come, give the asparagus bed a rest, and keep off all weeds until the tops cover it.

Beans of the bush sorts may be planted for succession, and for dried beans. It is not too late to plant Limas and other runners. The White Runner is sold in many places as the Lima; though a very good bean, it is inferior to the Lima, and may be distinguished from it by its greater plumpness, and more shining surface.

Cabbages, Cauliflowers, and Broccoli.—Plants of these may still be set out. The growing ones need to have the soil frequently stirred, and they will be greatly forwarded by the use of liquid manure. Find the holes of the cut worms and destroy them; kill caterpillars when young, and if lice are troublesome, sift on air slaked lime or ashes.

Beets.—Hoe and thin freely those that are growing, and sow the Long Blood for the main crop.

Carrots.—Keep ahead of the weeds by working the ground as soon as the plants can be seen. Thin to six inches. It is not too late to sow seed.

Celery.—Set early plants in well manured trenches, or if flat culture be preferred, in rows three feet apart, the plants six inches distant in the rows. Plants for a late crop should be watered as needed, and be cut back to make them grow stocky.

Corn.—Good sweet corn may be had until frost comes, by planting a patch every two weeks.

Capsicums.—These, like all other plants of tropical origin, need a warm exposure and rich soil.

Cucumbers.—Plant as directed last month. Besides the striped bug, there is a yellow bug with spots like the lady bug, that is most destructive. Fortunately they are not numerous; the only remedy we know is hand picking early in the morning. When the sun gets warm they are very lively, but in the cool of the morning they are quiet.

Egg Plants.—Forward them by all possible means, rich soil, warm exposure and frequent hoeing. Draw the earth towards the stems to support them.

Endive affords an acceptable substitute for lettuce in the hot months. Sow and thin, or set out the plants so that they will stand a foot apart each way.

Lettuce.—Sow seed frequently to keep up a succession, and transplant to a cool and shady place.

Melons.—Treat the same as cucumbers.

Onions.—Thorough weeding and thinning are more necessary to success with this crop than to any other. Every weed must be kept down, and if good bulbs are desired, thin to 3 or 4 inches in the rows. Boiling water poured through a colander is one of the best remedies for the maggot. When the tops of potato onions fall over, pull them.

Pursnips.—Weed, thin and hoe as soon as plants are large enough to handle.

Peas.—Stick with brush as soon as well up, as when the plants fall over, it is very difficult to get them to stand up. Late planted peas should be put in deeply worked soil. If seed is to be saved, the earliest and best vines should be reserved for this.

Potatoes.—Hoe, and at the same time give a handful of plaster to each hill.

Radishes.—Otherwise vacant places may be sown to radishes for a succession.

Rhubarb.—If any flower stalks appear, cut them down. Now is a good time to dry or bottle a supply for winter. Keep the beds free of weeds.

Ruta Begas.—Sow latter part of June; as soon as up, dust with lime and ashes to keep off the fly.

Salsify.—If not already sown, seed may still be put in. Treat the same as carrots.

Spinach.—The New Zealand spinach is best for hot weather, but a supply of the ordinary kind may be kept up by sowing at intervals.

Squashes.—Plant as directed last month. More vigilance will be required to keep off insects.

Sweet Potatoes.—Plant if not already done. See directions for preparing the ground, last month.

Tomatoes.—Plants for the late crop may be set. We have given in the present and previous numbers sufficient directions for those who wish to follow any of these different methods of training.

Watering.—The free use of the hoe and cultivator will do much in helping plants through a dry time. If watering must be done, let it be thorough, and soak the ground well. A mere sprinkling of the leaves of the plants, and the surface of the soil are of little use. Liquid manure, applied in a "growing time," will help wonderfully. Apply it weak.

Weeds.—We can only emphasize what is said above. When one gets large enough to be seen, it is already too large to live.

Fruit Garden.

There is no operation in the fruit garden more beneficial in its results than thinning the fruit, and there is none so generally neglected. Over-bearing is generally permitted, to a fault. Fruit should be thinned not only for the benefit of the present crop, but for that of next year. The earlier the surplus is removed after the fruit is set, the better, as the tree need not be expending its energies in developing fruit that is ultimately to be destroyed. It will even pay to thin the

Currant, where extra specimens are desired. Rub off useless suckers and branches as they start, and and if the soil around the bushes is not mulched, keep it stirred by hoeing. The worm on its first appearance is to be sprinkled with powdered white hellebore, as before directed, and if the borer appears, cut off the affected shoots and burn them.

Gooseberries, when heavily loaded with fruit, will need props to keep the branches from the ground. Use sulphur if mildew appears. In city markets both these and currants often bring a better price if marketed when green.

Raspberries and Blackberries.—All suckers that are not needed for making new plants, are to be cut off as fast as they appear. Tie the canes now growing for next year's fruiting to the trellis or stake.

Grapes.—Thin out the bunches freely, especially on young vines. One bunch to the shoot is as much as a vine should carry the first year of its fruiting. Stop the shoot at three or four leaves beyond the last cluster. Young vines should grow only a single cane the first year, and be kept tied up. See treatment of mildew on page 223. Hand picking must be resorted to for the large beetles and caterpillars.

Dwarf Pear and other fruit trees may be shaped at will by pinching the young growth. The systematic practice of this is given in full in Rivers' *Miniature Fruit Garden*. The disagreeable slimy slug which appears on pear and other trees is killed by a dusting of air-slacked lime.

Strawberries.—If the plants are not already mulched, they will need it before the fruit gets large. Straw is generally used, but corn stalks or any other material that will keep the fruit off of the ground will answer. After the fruit is off, clean the beds with the hoe. Newly set plants are to be kept free of weeds, and unless it is desired to multiply plants, the runners are to be cut off.

Flower Garden and Lawn.

In this month of abundance of flowers, there is constant employment for the cultivator. He finds

Weeds growing rapidly both in the beds and borders and on the lawn. A sharp steel rake is a capital implement to dress over the beds with, and the bayonet hoe will serve to work the soil where plants are too near together to allow of the use of the rake. Do not let perennial weeds get established on the lawn, but pull them while still small.

Bulbs that bloomed this spring should be allowed to remain as long as the leaves continue green. When they begin to fade, take up the bulbs, allow them to dry a few days, remove the tops, wrap the bulbs in paper and store them in a dry cool place, where they will not be injured by mice.

Annuals will need transplanting, and those sowed where they are to bloom are to be thinned. Crowding is a common fault with those who grow annuals, and we seldom see a well developed specimen. Seeds of many sorts may still be sown. See p. 227.

Bedding Plants.—*Ageratums*, *Gazanias*, *Verbenas*, etc., may be made much more effective if they are pegged down, so as to best cover the surface. This is especially necessary in windy places. When

Potted Plants are used in the decoration of the grounds, it is much better to plunge them, putting coal ashes under the bottom of the pot to keep out worms. When the pots are not plunged, care must be given to the watering.

Herbaceous Perennials of many kinds, such as *Phloxes*, etc., may be multiplied by making cuttings of the stems before flowering.

Neatness of a garden is in good measure through the agency of sticks and strings. Plants that need support should be kept tied up, but the means by which the effect is produced should be, as much as possible, concealed. Under head of neatness is included the care of gravel and other walks, frequent mowing of lawns, keeping edging in trim, etc.

Green and Hot-Houses.

The majority of the plants being out, all necessary repairs can be made. The plants that are left within, will need shading from the burning sun, and watering and syringing. The plants kept in pots out-doors should be so sheltered from high winds, that they will not be thrown over, and it is well to stand them on a layer of coal ashes, to keep worms from working their way up into the pots. Many things may be turned out with advantage.

Azaleas, Oranges and many others make a good growth when treated in this way.

Camellias and other plants of temperate climates should be well shaded.

Insects, other than the usual pests of the house, will often attack plants that are set out, and they must be looked to frequently, and

Water must be given as often as needed.

Stock for winter bloom may be propagated from cuttings, and sowing seeds of green-house plants.

Rotting Soil should be provided for in advance, and a yearly provision made by stacking up sods from an old pasture to decompose.

Cold Grapery.

All sudden changes are to be avoided, and the temperature kept from 85 to 90, at mid-day, allowing it to sink very gradually to the night temperature. During the time the vines are in flower, it is well to go through the house and give the bunches a gentle flirt with the finger, in order to facilitate the distribution of pollen. While the vines are in flower, the use of the syringe is discontinued, but after the berries are set, it is freely used. One bunch to a spur is enough fruit to leave, and the shoot is stopped by pinching it at the third or fourth leaf beyond the bunch. The number of bunches to be allowed to a vine will depend upon its strength. It is well to avoid an excessive crop. When the berries attain the size of peas, they are to be thinned and one half or more, according to the variety, removed from each bunch. As the

fruit increases in weight, the bunches will need to be tied up to the wires.

Apiary in June.—Prepared by M. Quinby.

June is the swarming season, though bees often commence in May, and sometimes wait until July to begin. Any one wishing to increase his colonies to the utmost, must secure at least one swarm from each stock that is sufficiently strong. This is a matter which is to a great extent under control. A hive will often exhibit all the indications of swarming, except actually issuing, and yet not swarm. Make artificial swarms as directed last month. If you do not intend to make all the swarms possible, it is well to put on the surplus boxes, but do not expect the greatest yield of surplus honey, and at the same time great increase. Often the non-swarming hive will store honey enough to buy a good hive or two of bees when sold. Prepare the surplus honey boxes before placing in the hives by sticking in the top of each some nice white combs the right distance apart, to serve as guides to the bees; pieces an inch square will do. Mr. Harbison says, instead of melting beeswax into which one edge of the comb may be dipped to make it stick, these pieces may be glued. Stocks not strong enough to swarm by the last of this month, should be made to show cause. If diseased, drive out as directed June, 1865. If queenless, give them a new queen, unless too weak to keep out worms. If the queen is barren, destroy her, and replace with another, in a few days. In a good season, bees quite often swarm too much—more proportionally in small, than in large apiaries. When no queens are reared artificially to supply stocks or swarms, it is usually most profitable when practicable, to limit the issues from each, to one. With the movable combs, this may be controlled. As a rule, five or six days after the first issue, take out the frames, and cut out all queen cells but one, leaving the oldest. If any are not sealed, it may be necessary to open the hive again in three or four days, and cut off any cells that may subsequently be started. "After-swarms" usually issue from the 8th to the 13th day after the first; they need not be expected after the 18th day. It takes two second, or four third swarms to be equal to one of the first. If two or more can not be united, it is better commonly to return them to the old hive. With a half dozen or more movable comb hives, it is needless to have any very weak, at least, after the weather becomes warm. Bees are increasing much faster when all are strong, than when some are much crowded, and others very weak. They are easily equalized, in a few days, by taking some combs from the strong hives, filled with brood, ready sealed, and exchanging them with the weak ones. Should chilly nights occur before there are bees enough hatched to protect these combs, the entrances should be nearly closed, and old carpets or blankets used to help keep the hive warm.

"Gift Enterprises" at Washington.

"D. D. C.," a well informed correspondent at Washington, under the head of "Sturdy Beggars," has furnished some facts and hints recently printed in the *Tribune*, *North American*, and other journals, which are worthy of still wider circulation. We print portions of two of his letters, all we have room for, not merely to criticize the way things are done at Washington, but as suggesting a reform which the people themselves may help carry out:

"The gift-book and seedsmen business, as carried on by our national Government, actually compels members of Congress to neglect their legitimate duties to a great extent, and act as book, seedsmen and general agents to a clamorous constituency.—The experimental garden of the Agricultural Department, a most excellent feature of our Government, should be removed from the dust of the City, enlarged to the size of a farm, conducted as at present, and the results of the experiments spread freely throughout the country by means of reports to the agricultural and other presses, willing to devote the necessary space to the subject. The superintendent should, as at present, send a few seeds of his own raising to the various agricultural societies, with particular instructions as to their propagation, etc. But the practice of pur-

chasing miscellaneous seeds by the ton, and forcing members of Congress to act as seedsmen in general to their constituency, is a nuisance which calls for abatement.

"Members of Congress are sent here to deliberate and legislate for the best interests of the country. But the amount of work they are called upon to perform, as claim agents, seedsmen, gift-book agents, and showmen to sight-seers, surpasses belief. And in some cases the amount thrown upon members by their constituencies, is sufficient to employ constantly four or five active business men. Some of our members receive as many as 200 letters per day, requesting all sorts of favors, from a gold pen up to a library, completely overwhelming the unfortunate recipients, leaving them actually no time for legislation.

"But," says one, "it rests with Congress itself to change all this." Not at all. No member likes to be considered churlish and indifferent to the wishes of the people; and though greatly overworked, he is the last to complain. Thus it is left with the people themselves to consider well the legitimate duties of their representatives in Congress, and having done so, cease at once to regard them as claim agents, seedsmen, clothiers, or gift-book agents.—If thought necessary that the national Government should continue to transact a general retail business, let us by all means have a department created for the purpose, called, say, 'The Department of the Retail Trade,' with a commissioner and force sufficient to attend to the business, and take a burden off the shoulders of Congress that it may attend to legitimate duties...."

"The abuses flourish, however, and will continue so to do, so long as Congress continues to appropriate money for the purposes of purchasing seeds, printing books, or making clothing even, for free distribution among the thousands ready to take whatever they can get at others' cost.

"I am in favor of judicious expenditure of money in public printing, but am entirely opposed to the publication of expensive books for indiscriminate distribution as at present carried on. For instance, the Report of the Census of 1860 is published in four volumes, the last volume being now nearly ready for the binder. These volumes cost, so I am informed by the officer in charge at the Interior Department, about \$12 each, and are circulated free by the tens of thousands. I have seen these \$12 volumes for sale at paper rag stores in this city, at seven cents per pound, before they had been from the press a month! I may almost say they went direct from the Government press back to the paper-mill. Millions of dollars of the people's money are thus absolutely thrown away.

"Another instance is the seedsmen's division of the Department of Agriculture, the original intention of which was to distribute a few samples of choice seeds of rare production to different parts of the country, to introduce and foster the cultivation of new productions, but which has grown into an erroneous abuse, a mere machine for the free distribution of tons and tons of miscellaneous seeds, purchased with the people's money in every direction. I have received 10 packages of these seeds, which I forward to you, as samples, by express, the mails being too much encumbered by franked matter to render it certain you will get them by that conveyance. Though immense amounts have already been distributed, I see that the Department has a 'few more left.' A morning paper states that:

"On Wednesday, at 1 o'clock, the first floor of the agricultural seed-room on F-st., between Sixth and Seventh, gave way, letting down about three tons of seed to the basement. Mr. McDonald, one of the employees, went down with the floor, and received a few bruises. The seed being in bags, the damage was only to the building."

"An additional appropriation will doubtless be needed to procure a store-house sufficiently strong to hold the 'tons of seed' sufficient to supply a constantly increasing demand. I am well aware that our present Congress is immaculate; but it must bear the sole responsibility of these abuses. So long as that body appropriates the people's money for useless expenditure, it will be expended.

A Show of all Kinds of Wheat.—An Important Request.

There is a great lack of accurate knowledge about the various kinds of wheat which are cultivated in different sections of our country. Many of these are introduced varieties, which may have maintained to a considerable degree the characteristics known where they originated, or their characters may have been greatly modified by our soil and climate. Besides, distinct varieties have probably originated in this country; the same variety is known by different names in various localities, and one name is applied to very diverse kinds. We propose therefore to the readers of the *Agriculturist* to join with its Editors in collecting and classifying our wheats. The present postal regulations offer great facilities for so doing, and the result will, we hope, be of very great value to each contributor and to the whole country; but this can only be if our suggestion meets with the hearty co-operation of

our readers who are wheat growers all over the country.

Please send to the *American Agriculturist*, 41 Park Row, New York, by mail, marked "Plants only"—or "Seeds only," as the case may be, the following:

1st.—1 doz. heads large and small as they run, cut when just out of blossom, and dried in the shade, (best in the house, but not near the fire.)

2d.—A stool or two with the stubble 6 inches long—or better the whole plant, pulled up by the roots with the straw broken as little as possible in bending for packing.

3d.—A quart of the grain—being a good average sample.

Accompanying these the name in every case written clearly, and the name of the sender with P. O., County and State. Postage prepaid is 2 cents for each 4 ounces.

4th.—By letter at the same time, a concise history and description of each variety, especially time of flowering in comparison with several other kinds, the time of ripening, liability to winter kill, to be injured by the mildew or fly, or by rust; its tendency to shell out, or not to shell; also the stiffness, length and general character of the straw, the amount of leaf, and other peculiarities; also the different names the variety is known by, and any other facts which may be deemed of interest.

We will see to it that samples are sown side by side under good circumstances, and so try to ourselves make fair comparisons between them, and of course report from time to time. Should it be too late, or inconvenient to send the samples of heads, or of the whole mature plants, we hope the sample of grain with the description may still be sent, as the importance of a thorough investigation of this kind can hardly be over-estimated.

The samples of the heads and of the grain will be kept on exhibition and for reference, at the *Agriculturist* office.

Married.

At Palisades, Rockland County, N. Y., Thursday, April 26, by Rev. S. Hitchcock, MASON COGSWELL WELD, Associate Editor of the *American Agriculturist*, of New-York, and MARTHA M., daughter of Henry Coles, of Palisades.



Containing a great variety of Items, including many good Hints and Suggestions which we throw into smaller type and condensed form, for want of space elsewhere.

TAKE NOTICE!—All Subscriptions begin with the Volume, unless otherwise desired and specified when subscribing. All subscriptions received up to June 25th are entered down for the entire volume, and the numbers from January 1st are forwarded. We keep on hand, or print as needed from our stereotype plates, the entire numbers of the volume, to supply to subscribers, and to others desiring them. Subscriptions received after June 25th, begin at the middle of the volume, unless otherwise desired or specified.

Clubs can always be increased at the original club price, if the subscriptions begin at the same time. The back numbers are sent to the new names added.

The Postage on this Paper is positively only 3 cents per quarter, or 12 cents per year, when paid quarterly in advance at the office where received. The law fixes this rate definitely on monthly journals weighing not over 4 ounces, and we carefully keep within this weight, having all our paper specially manufactured with this end in view.

Books.—Several valuable new books are being issued the present season, some of which are referred to in "Basket items," and a full list of those regularly supplied, is given on page 233.

Those Premiums—Last Call.—On page 232 we publish the lists of general and special premiums, which we propose to close up at the end of the half year (June 30), allowing sufficient time thereafter for names to come in from the Pacific Coast and other distant points. These premiums are certainly valuable, and worth all the effort required to get them. Every Present Subscriber can readily get one or more of the "One Subscriber Premiums." The books are valuable, ranging in price from 30 to 50 cents each. No books, however large, have ever been issued on Flax, Hop, Tobacco, and Onion Culture, which are so valuable, as those named in the list. None of the works offered are "old stock," but they are all newly printed, and most of them are just from the press.

Missing Numbers.—The mails seem to have been unusually irregular lately. In several in-

stances, papers that we positively know were mailed, have failed to reach their destination. Though it is hardly just that we should make up all the deficiencies of the Government agents, we cheerfully send duplicates of numbers lost by mail, without charge—not of course for such as are lost or torn after their reception.

930 Strawberry Plants from One.

—F. A. Rich, Wallingford, Conn., writes, that from one "Agriculturist" plant, received from this office the previous autumn, he last season obtained 930 plants, and "thinks that doing pretty well for one plant in one season in the open ground." So do we; and we hope the fruit will be proportionally productive, which, of course, can only be looked for this year on the first formed and most fully developed plants.

A Bread Kneading Machine Wanted.

—M. B. Rodman, speaking in behalf of the New Bedford Orphans' Home particularly, and of housekeepers generally we suppose, asks if we can not have a small handy machine for mixing and kneading bread, the staple food, which requires so much hard woman's work. We know of no such machine of practical utility. Here is an unoccupied field for clever inventors.

The Advertisements are curtailed this month, to make room on pages 232 and 233, for some matters usually placed in the first pages, so as to leave more space here for basket items, which many consider the best part of the paper. Several interesting announcements of implements, plants, etc., etc., will be found in the advertising pages, which will no doubt attract attention. We repeat the usual suggestion, that those willing to advertisers for circulars, for information, or ordering of them, will confer a double favor, by letting them know where their advertisements were seen.

Sundry Humbugs.

—We have not space to describe each of the scores of swindling operations that have come to our knowledge within a month past. A large proportion of these are so similar to those previously described, that nothing further need be said of them. Most of the operators in gift enterprises, prize jewelry schemes, watches, lockets, chains, sewing machines, to be given by tickets, etc., etc., have changed their names and places of business. To-day we dropped into a new swindling shop, as we know it to be, (though it is difficult to prove it so, without calling sundry witnesses here from Iowa,) and we found precisely the same parties operating, that last month were at another place under a different name. There are still thirty to forty of these swindling shops here, operating only at distant points, through the mails; but we are happy to learn that the aggregate receipts of letters by these cheats are not half what they were before the *Agriculturist* began its fresh warfare upon them the present year—a saving to the people of at least \$5000 a day! We add a few notes: Jno. H. Bancker, of Schenectady Co., N. Y., sends a circular left at the houses there by a set of sharpers, who called themselves agents of a failed New York house, (never in existence,) and promised to be along in three or four days with an immense stock of goods, at far below half price. This was a blind. They merely "sold" a few samples of cloth they "happened" to have along, which, after they were gone, proved to be worthless shoddy, well glazed over. The throngs of people who came together to get a chance at the promised sale of cheap goods, went home with the countenances of two-year-old lambs.... Mitchell, Arrandale & Co., (one of them, if there be more than one) a long time operator in New York, has opened a swindling address at Plaitow, N. H., and sends out tickets, pretending to have been paid for them, offering an immense number of things "worth" \$6 to \$350, on receipt of \$5. These, like fifty other similar operators, are the veriest swindlers. They do not send watches worth \$50 for only \$5. L. A. Kirkwood, Bentonville, Ind., sends word to them that he has read the *Agriculturist* too long, and has too much else to do, to attend to the agency of such rascals. Many others send us tickets from the same concern.... Wm. J. Elliott & Co., Lottery dealers, with no advertised place of business except a P. O. box, are operating on eloquence or highfalutin. On the back of their schemes they go into extasies over the details of numerous prizes they claim to have distributed to "factory girls," to "bed-ridden old ladies," to sundry "farmers," etc., etc. Why don't they give the names of these lucky people, for they ask the privilege of sending just such prizes on purpose to be able to publish their names, and to have them "make it generally known where they got the money," as an advertisement. Oh! Mr. Elliott, why are you so partial? Why don't you give us your place of business, so that we can call in and get one of them are \$10,000 prizes you profess to be scattering round so freely? Pray come out of that little P. O. Box and let us find you; we ache to get \$40,000 for only \$10 invested. It now costs \$1 to get \$1.07

a year.... What loving fellows are *Bergen, Schultz & Co.*, up the river, who offer to send the "Perfume of Love," "possessing the power to create love."—Why surely everybody ought to have a bottle of that; what a loving world this would become! Then they supply a liquid to contract ladies feet!—regular John Chinamen they are. But hold! they advertise "female pills" reprobated last month. Away with them, their love is love of money, however obtained. A little boy in Pennsylvania received one of the circulars addressed to himself, and wonders "how they got his address, and what the circular was sent to him for." So do we.... A disgusting murderer of morals, as well as of lives, sends out private circulars, many of them reaching decent people, in which, under the name of *Mrs. M. Simmons & Co.*, are offered offensive "instructions," instruments, etc., ostensibly to married people, but designed to deceive and lead astray the young. The representations are not to be trusted in the least, and those offering such things deserve to be lodged in the closest cells so long as they may trouble the world by living at all.... The "Company of Merchants and Manufacturers of New York," with a long list of "officers," only one of whose names can be found in the New York City Directory, is a very ingenious plausible scheme to get people's money. It was in a basement room 542-4 Broadway, but put forth an engraving of the whole building. It was gone May 17!

Trichinae in American Pork.—Those of our contemporaries who have attempted to throw ridicule upon the subject of Trichinae, as well as those who, like the *Country Gentleman*, have volunteered a flat denial of their existence in American pork, are referred to the report of the committee of the Chicago Academy of Natural Sciences. This committee examined the flesh of 1394 hogs, from the markets and packing houses, and found that about one in 50 was more or less infested. The committee state that a heat of 150° will destroy the parasite. It is to be hoped that this statement is based upon actual experiment, as it is important, and if true will enable those who eat pork to avoid all danger by thoroughly cooking the meal.

Don't Do It.—The N. Y. Independent, a professedly religious paper, among other miscellaneous matter has a column devoted to agriculture and kindred branches. If its theology were as loose as its horticulture, we would pity its readers. Among other absurdities, it recommends setting out cabbage stumps for raising seed. If there is any seed that needs care in raising, it is that of the cabbage, as this plant is far removed from its natural condition, and will revert to it, more or less, with the least neglect. Therefore don't follow this wise man of the Independent, but use only the best developed and best kept cabbages, with the head on the stump, for seed raising, and then allow only the central flower stalk to grow. Any other course will be sure to degenerate the variety.

Horticultural Humbugs.—Persons who buy plants at auction, unless they are from some known reliable source, are liable to be sadly taken in. One of the most flagrant cases of imposition that we have met, was recently brought to our notice by an amateur, who showed us the catalogue of an auction of plants to be sold at 100 Liberty St., N. Y. The catalogue was profuse in names and descriptions of plants, but gave neither the name of the auctioneer, nor of the grower of the plants. Our friend says: "I strolled into the auction store half an hour before the sale. Upon my arrival I found the plants arranged for sale, and an uninteresting looking Dutchman decorating the walls of the auction room with a collection of the most unique and startling floricultural and pomological illustrations, that the most fertile imagination could design. Attracted by the plates, I commenced an inspection of them. My attention was first directed to the greatest pomological production of the age—something ahead of mock auctions, dollar shops, or Barnum. It proved to be a 'correct illustration' of a small branch of the wonderful and *bona fide* 'Strawberry Tree.' The small branch was loaded with beautiful crimson fruit measuring from 10 to 13 inches in circumference—an actual strawberry tree, casting into the shade the *Agrioculturist*, *Jucunda* and all other creeping humble strawberries! Fancy, Mr. Editor, the pleasure of climbing a real genuine Dutch strawberry tree, and supplying the inner man with mammoth strawberries, free of sand, dust, or earthy taste. The climate prevents a man from setting under his own fig tree; but thanks to the progressive Dutchman, every man can sit under his own strawberry tree; one fruit being large enough to make a pudding. Continuing my explorations, I discovered a beautifully executed plate of a remarkable floricultural novelty—that of the *Aucuba Japonica*, fl. pl. The flower was about 5 inches in diameter, very double, and the petals nicely imbricated; color intense dark crimson, with a broad white stripe running the length of each petal. These two samples are not specialties selected from the

host of floricultural monstrosities exhibited; but simply types of the majority. Leaving the 'correct illustrations,' I shall refer to a few articles in the catalogue which I enclose for your inspection. The first I shall notice is a recent introduction excelling the efforts of a Fortune, a Low, or a Veitch. I refer to Lots 57 and 58. 'Three Trumpets of the Last Judgment assorted.' But the publisher of the catalogue neglected to state that he had furnished a Dutch Gabriel to blow these 'trumpets.' If you refer to Lots 179 and 180 you will find that my old and favorite Rose, Jules Margottin, has abandoned his old plain cherry crimson, and has assumed the stripes of the American flag. In the pomological line you will find described: blue chestnuts; blue raspberries; jet black apricots; pure blue Italian gooseberries, and some new apples, as follows: Jerusalem Pigeon; Happy Apple, and a veritable 'Eve's Apple.' I am convinced that a taste for horticulture and floriculture is rapidly gaining ground among the masses; but a few such trashy importations as the one referred to, will do a great injury. The young beginner will be attracted by such descriptions, and will freely spend the needful for such trash. Night and morning he will nourish, protect, and admire his floral pets, and when they drop their masks, he will become discouraged and disgusted. It is the duty of the *Agriculturist* to expose such impositions, and to advise the uninitiated not to be seduced by foreigners' descriptions, but to purchase *bona fide* plants and flowers from nurserymen who have reputations to lose, and under no circumstances to waste their means upon foreign adventurers."

A Hint to Secretaries of Agricultural Societies.—*Gentlemen:* Your reports are, many of them, strewn broadcast over the land, falling into the hands of many who do not value them, except to fill empty shelves in libraries, or to be sold to the paper makers or to the rag man. Now, if they were stereotyped, neatly bound, as many of them are, and sold at cost with a fair allowance for extra trouble, small editions might be printed, and reprinted as occasion might demand, and they would be productive of a small income to the society. (That is, if the States print them.) Useful knowledge would be more accessible than now to the public, and the books would be esteemed more highly by the community. We all value things somewhat in proportion to their cost.

Messrs. J. E. Tilton & Co., Boston, (Publishers,) request us to ask Secretaries of Agricultural Societies to send to them their published reports.

The American Dairymen's Association.—through its efficient Secretary, Mr. G. B. Weeks, of Verona, Oneida Co., N. Y., has already issued its first annual report, (135 pages, 8 vo.). It came to hand in April too late for a notice in our May number. It demonstrates what we have always claimed, that the reports of agricultural and kindred societies need not be kept back a full year before their members and patrons receive them, as is usually the case. This report covers the operations of the factory dairies of New York, and the doings of the Ohio Dairymen's Association for the past year; it gives a list of the factories of the United States and Canada in operation last year, and the admirable address of X. A. Willard, delivered at the annual meeting, January 10th. We presume the report may be had of the Secretary, by becoming a member of the Association (fee \$3.00), and perhaps for a less payment.

The West-Jersey Fruit Grower's Association.—The annual reports of this society are always received with pleasure, for they have a positive and practical character, truly commendable. The report of their fruit committee is a valuable record of local experience; and one, after reading it, feels thoroughly posted up as to the state of fruit culture for the past year, in Burlington and Camden Counties. We learn that 775 acres of land in strawberries, blackberries and raspberries, produced nearly \$200,000, or about \$250.00 per acre. Clayton Lippincott is President, and Jonathan G. Williams, Secretary, both of Moorestown, New Jersey.

My Vineyard at Lakeview.—An unavoidable delay has occurred in the production of this work, which is now ready. It is an account of the attempts of one of our western cultivators to establish a vineyard, and is put in an attractive narrative form. As it is the only work that gives an account of grape growing as actually practiced at the successful vineyards in the grape region of the West, it will be welcomed by a large class of readers. Price by mail \$1.25.

Culture of the Grape. by W. C. Strong. Boston: J. E. Tilton & Co.—We have here another work upon the grape, produced in the sumptuous style of paper, printing and binding adopted by the house of Tilton & Co. The work in itself is about as good as several others upon grape-growing. It is illustrated with engravings, some of which are as bad as well can

be. The three engravings, representing the flowers of the grape, are curiosities in their way. If such flowers could be found in nature, our botanists would indeed be puzzled. While it adds to the number of books, it does not add at all to our knowledge of the subject. It is the well known story presented in handsome shape by another author, and will be a safe and useful guide to a novice in grape culture. Price by mail \$3.00.

The N. Y. Evening Post, in its 65th year, has been edited for almost half a century by the favorite American Poet, Wm. Cullen Bryant, now over 70 years old. Though we do not always agree with its political and financial views, yet, all things considered, we have long esteemed the *Evening Post* more highly than any other Daily, especially as an always safe journal of general news and literature to carry to the home circle. Our profession requires the constant reading of newspapers, but we could hardly choose between having the newsboy miss us with the *Post* that we read on our way home, and having the cook forget the supper.

Interesting Publication.—As many of our readers are aware, 1866 brings the one hundredth anniversary of the establishment of the Methodist Episcopal Church in this country, and it is to be generally commemorated by benevolent enterprises worthy of this widely extended and powerful denomination. A Centenary Pictorial, illustrative of the history and spirit of Methodism, is issued under the direction of the Centenary Committee, by N. Tibbals, 145 Nassau-st., N. Y. City, which will be an attractive and valuable compendium of interesting matter pertaining to that branch of the Christian church. Price 25 cents.

Study of Entomology.—"H. C. M."—Harris' Insects is the best work we have, but that is devoted to injurious insects only. Tenny's Natural History gives a general outline of classification, and there are monographs of several families of insects published by the Smithsonian Institute.

The Fair of the N. Y. S. Agricultural Society will be held at Saratoga Springs, on the 11th to 14th inclusive of September next.

Spear's Fruit Preserving Solution.—To save answering individual inquiries in regard to this, we will state that we have seen fruit perfectly preserved by its use; that from our knowledge of its composition, it appears no more likely to prove injurious than the use of cream of tartar and soda in bread.

The Turtle Soup Bean.—Letty Ermin writes as follows, after experience with this bean, which is now becoming popular. Its culture is the same as other bush beans: "The wonderful bean—not 'Jack's bean,' but wonderful, inasmuch as it will make *turtle soup*. Try it and see. It is not a new bean, but has a new and sounding name, *Turtle soup bean*. Indeed, it is very palatable and nutritious, and withal of trifling cost, when compared with turtle soup, which, in appearance, it is so like. A pint of beans will make a gallon of soup. Put the beans to soak over night, boil them soft, add salt and pepper, and pass all through a colander. This is the simple form. By adding meat stock, cloves, hard boiled eggs cut in slices, a lemon sliced, and a pint of wine, you have an excellent dish, with small trouble and cost."

Experience of the 18th Onion Grower.—"L. L." somewhere in the latitude of Philadelphia, gives us his onion experience in so pleasant a manner, that we are sorry not to have room for it. He read the experience of 17 growers in our Onion book, and gives his as that of the 18th. He has established two points: one, that onions can be grown from seed in his locality, for he succeeded with a small patch in 1864. Encouraged by this, he went into it on joint account with another, who was to do the work, but who didn't, and he had to mow the weeds to get at his onions, what few there were of them—thereby settling, to his satisfaction, the second point, that onions are a crop that requires great care in cultivation.

A Miniature Egg.—Numbers of persons have sent us eggs remarkable for large size and great weight. Now, Master Willie Judd, or rather his hen, has tried what can be done in the opposite direction, and he sends us an egg not much larger than a good sized marble. None of this breed of hens are for sale.

Soap Water.—"G. H. B." New Haven, Conn., says he can secure daily a considerable amount of soap water from a silver burnishing establishment, and asks how to use it?—Conduct it in rills over the grass, or through the vegetable garden, to soak into the soil, watering one plot at a time; or lead it upon dry muck, that it may be absorbed, if there are no deleterious metallic salts.

The Rinderpest.—The fact that this terrible malady has abated to a considerable extent in Great Britain, (though confessedly not on account of the measures used by the government to stay its progress, for these have been most imperfect and ill advised), should not make us less vigilant that it should not be imported here. The great danger is from cows used for milk on our passenger ships, and we hope that now stringent measures will be taken in regard to these. The law of the State of New York we give in full on page 220. The Commissioners appointed are well known and honored throughout the country. No man in the State is more identified with the cattle interest than L. F. Allen, of Black Rock, Erie Co., a man of more energetic executive talents than Gen. Patrick could hardly have been selected, and Mr. Kelly is discreet and conservative, and is identified with the agricultural interests of the State. The law requires owners of cattle suspected of having the disease, to communicate the facts to the Commissioners, but does not give the P. O. address of either. We give Mr. Allen's address above, but are not quite certain where to address the other gentlemen.

Horse and Cattle "Doctoring."

We are constantly in receipt of remedies for horn-all, horse-distemper, fowls, heaves, hog-cholera, worms, etc., etc., and publish but few. In fact we always dread to publish a remedy for any disease without accurately describing the malady, its nature and symptoms, for common names are so uncertain, and among the owners of cattle of any kind the desire is so strong to do something, that it is an even chance that they do not do exactly the wrong thing. With regard to ordinary ailments, nature is the best nurse and doctor, and in cases of the chronic character, especially if the disease be one not thoroughly understood, the advice of a good veterinarian is most important. There are, however, some acute ailments, like Hoove, or Bloat, caused by eating much green food, which ferments in the stomach, Colic, Garget, etc., which are very properly subjects for anybody's discreet treatment. And again there are some simple disorders, like colds, sores, slight fevers, scours, etc., which all farmers should understand, and for which they should have and use simple remedies. In all things careful investigation of symptoms, and an approximation to certainty in regard to the nature of the distemper should precede any other treatment, than, thorough grooming and the removal of the animal seen to be "out of sorts" to most comfortable and isolated quarters, where it may have the best of food and care.

The Sheep Show at Rochester

was in some respects a success and in others a failure—a success so far as the exhibition of "American Merinos" was concerned and a failure in respect to other breeds. There were a few fair Cotswold and Leicester sheep from this State and Canada, and one or two pens of ordinary South Downs. There was also a splendid lot of Silesian Merinos shown by Mr. Chamberlain of Red Hook, and that was all. The "Gas Tar Merinos" were out in great force, and if one did not know that these twenty-five-pound fleeces of which so much was said, were made up of four or five pounds of wool and twenty pounds of grease, they would be objects of real agricultural interest. But when we think that this grease probably costs as much to produce as two or three times as many pounds of tallow, or even more of flesh, and that this offensive product is absolutely worthless, and furthermore the wool is not of first quality, we can but wonder that this breed should receive so much favor from intelligent men. If this grease growing be persevered in, we fear ultimate injury to the great wool producing interest of the country. The Silesian sheep were in many respects admirable. Good constitution affording a fair carcass and fine wool. We hope the breeders of these sheep will develop the mutton producing qualities, as far as is consistent with the production of heavy fleeces of pure fine wool. Put the tallow inside rather than outside among the wool. We feel confident that this can be done. The skill and intelligence required to produce heavy fleeces of grease and wool combined, can, if properly directed, give us as much wool without the grease and at least an equivalent for the grease in the form of good mutton and tallow. Success to all efforts in this direction. We admire the Merino sheep—they are admirably adapted to the nature of American agriculture, and if bred with the right object, will prove of untold value.

Rev. Edward A. Wilson.

The man who operates under this name, though often exposed and denounced, continues to advertise extensively from year to year, and of course finds poor dupes enough to pay him for doing so. Indeed the numerous letters of inquiry from our new subscribers indicate that his plausible statements, his assumed clerical name and garb, and his pretended benevolence, are effective with a large number of people. Our older readers will re-

member that he claimed to be a minister of the "New Haven Methodist Conference," until we exposed his falsehood by stating that there was no such Conference. He then studied up the church documents and claimed to have belonged to the N. E. Conference.—Here is a copy of his advertisement, to be found in many papers:

To CONSUMPTIVES.—The advertiser, having been restored to health in a few weeks by a very simple remedy, after having suffered for several years with a severe lung affection, and that dread disease, Consumption—is anxious to make known to his fellow-sufferers the means of cure.—To all who desire it, he will send a copy of the prescription used (free of charge), with the directions for preparing and using the same, which they will find a sure cure for CONSUMPTION, ASTHMA, BRONCHITIS, COUGHS, COLDS, and all Throat and Lung Affections. The only object of the advertiser in sending the Prescription is to benefit the afflicted, and spread information which he conceives to be invaluable, and he hopes every sufferer will try his remedy, as it will cost them nothing, and may prove a blessing.—Parties wishing the prescription, FREE, by return mail, will please address REV. EDWARD A. WILSON, Williamsburg, Kings Co., New York.

Generous man to pay tens of thousands of dollars a year in advertising, and then give away the recipe. We will publish it free, and do more too. We will publish also, to our million readers, the Recipe just as (Rev.) Wilson furnishes it, and thus we save to all of them the expense of postage, and save (Rev.) Wilson the expense of printing and mailing his prescription. Here it is as (Rev.) Wilson gives it:

"Extract Blodgett 3 oz.; Hyphosphites of Lime and Soda ½ oz.; Alantim, (Pura) 1 dr.; Meconin, (Pura) ½ oz.; Extract Cinchona, 3 dr.; Loaf Sugar, 1 lb.; Pure Port Wine, ½ pt.; Warm Water, 1 qt.—Compound and mix well all the powders and extracts, place in a bottle, with ½ pt. warm water, shake well; add rest of water, the sugar and wine (or rum or gin); shake well and when cold it is ready for use. Dose, 1 large tablespoonful 4 times a day, before each meal, and on going to bed...."

There now, are we not generous, to give all this space which others would gladly pay \$2 a line for? But let us see about the value of this prescription: "Blodgett." Nobody knows it, except this (Rev.) Wilson: no regular druggist in the country can supply it. So the benevolently given prescription of (Rev.) Wilson is useless. "Alantim (Pura)"—in other words a starch from elecampagne root, no better and no worse than so much potato starch, and therefore not made or kept on sale by druggists. "Meconin (Pura)," a constituent of opium, which no druggist finds it worth while to keep. "Hyphosphites of Lime and Soda," recommended for lung diseases in Paris, but not yet proved effective enough to be adopted in the United States Pharmacopoeia, and of very doubtful utility. The extract of Cinchona, and the Wine are common, and will often stimulate weak or consumptive persons so as to make them "feel better" for a little while. There is not a doctor in the land who could not give or would not give a prescription quite as safe and valuable as the above. But see where the laugh, or the humbug, or the "benevolence" of (Rev.) Wilson comes in. He knows that his prescription cannot be put up by anybody in the world; so he generously informs his dupes, that when they chance to be unable to get it, he will condescend from his ministerial duties, and make up the package (except the sugar, wine, and water), and send it for \$3.30 by mail, or in a bottle ready mixed, for \$4, express unpaid. That's where he gets money to pay for advertisements; that's where his "benevolence" comes in.—Any one calling at "165 South 2d St., Williamsburg," to see the "Rev." if not frightened away by the big dog at the front door, may be informed on entering that the "Rev." is "not in just then." We hope this extended notice will suffice to put all our readers, and their friends, on the guard against the assumed piety and benevolence of the self dubbed "(Rev.) E. A. Wilson," and a host of other similar "pious" pretenders, for this year at least.

How Swindlers Get Names.—Caution to Post-Masters.

—In referring to this matter last month, we did not particularly speak of the most common method, which has been described to us by a multitude of Post-Masters. A party sends out to a thousand or ten thousand Post-Masters a circular, in which he proposes to have a new implement or other invention that he wishes to introduce, and asks the favor of having a hundred or so of the names and P. O. addresses of farmers and others. In return for the favor he usually promises a fine painting, or engraving, or something else. The thing looks so plausible, that a great number of persons have gathered and forwarded their names, but the Post-Masters seldom if ever hear from the swindler again, or from the engraving. The men whose names are forwarded soon after get the humbug circulars from the same party under a different name. Afterwards he assumes a still different name and place, and sends out a new scheme. Sometimes the lists of names thus procured are sold to other swindlers. One man by the name of Todd, who was the real Hayward & Co., of 229 Broadway, Hammond & Co., of Brooklyn, etc., has privately operated directly and indirectly under a score or more of names. Post-Masters will consult their own

interest, and that of their neighbors, if they cast all these applications for names into the waste basket or fire.

Those Garden Plots.—It would be gratifying could we know how many profitable, pleasure and health yielding garden plots have been developed throughout the country, mainly through the influence of the *American Agriculturist*, during the past dozen or twenty years. We are continually hearing of them in every direction. Some one, prompted by our premium offers, starts a list, and persuades a number of his or her neighbors to try the paper a year, though only clerks or mechanics, or professional men, or day-laborers, and having only a house lot or garden plot. Well, something they read sets them to thinking about improving their grounds, they go to work, and then read more, think more, and work more, and the result is a pleasant garden, beautiful flowers, fine vegetables and fruits, in short, an attractive homestead, and better health. We know this has been the direct result in thousands of cases. This is of course a great satisfaction to us. So our work, our premiums, our business efforts pay in more ways than one.

One of the Garden Plots.—What it

Yields.—The following is one of a large number of similar examples on hand: H. Johnson, Windham Co., Conn., who is engaged in a manufacturing establishment, describes his twenty square rods (¼ acre) garden or house-yard. It contains paths, grape-trellises, clothes-dryer, pen for pig, compost heap, etc.; 11 grape vines, of which 6 bore fruit, that last year drew 5 prizes and gratuities at the county fair; 5 dwarf pear trees, one of which netted \$4.35 for one bushel of fruit sold; 4 peach trees; 2 cherry trees; 32 currant bushes; English raspberries, rhubarb or pie plants, horse radish, sage-hed, plot of sweet corn, early potatoes, and sundry other vegetables, plenty of flowers of various kinds, and last but not least, strawberry plants that yielded about 5 bushels of berries, of which 100 boxes returned \$25.40 above expenses of selling. In this garden his one *Agri-culturist* strawberry plant, received the previous autumn, increased to 250 plants last year. Do not such plots pay aside from the healthful pleasure and amusement they afford? It was tilled at odd morning and evening hours.

The Weather and the Crops.

—We have had a remarkably dry, cold spring. Never was there a better time for getting in spring crops. Low, wet land is now drier than it usually is in July and August, and thousands of acres have been planted in good season that are generally reserved for buckwheat. The wheat and grass crops are not promising, but a few warm showers will revive them.

Garden Flowers: How to Grow

Them.—A treatise on the culture of Hardy Ornamental Trees, Shrubs, Annuals, Herbaceous and Bedding Plants, by Edward Sprague Rand, Jr. Boston: J. E. Tilton & Co. In his first work, "Flowers for the Parlor and Garden," Mr. Rand gave us a very useful hand-book on floriculture. In the present work he has taken wider scope and attempted to give a florist's dictionary or reference book for hardy ornamental plants. The genera are arranged in alphabetical order, the family to which each belongs is indicated, brief remarks upon the culture follow, and then a list is given of those species desirable for cultivation. In all that relates to the cultivation of plants the author is clear and to the point, that being a subject in which he is evidently at home; but when he touches the botanical names and relationships of the plants he describes, we find his botany as loose as that of a nurseryman's catalogue. A work of this kind should agree with the present state of botanical science, or, if it adopts the peculiar views of some European botanists, it should agree with itself; but this work does neither. In proof of the justice of this criticism we will cite a few instances out of many we marked during a perusal of the work. Leaving out the numerous examples of bad spelling and incorrect terminology, we find the author quite confused as to the names of natural families. The Grass Family, for instance, is called *Gramineæ* in some places, and *Graminaceæ* in others; which will the author have us adopt? *Abies*, we are told, belongs to the *Pinaceæ*, while *Pinus* itself is referred to *Coniferae*. Only a botanist would know that these were two names for the same family. The Mint Family is honored with three different names: *Labiatae*, *Labiaceæ* and *Lamiaceæ*. While several of the family are referred to *Lamiaceæ*, *Lamium* itself, which has given this name to the family, and one which is not used in this country, is given as belonging to *Labiaceæ*. Surely the amateur with a limited botanical knowledge will conclude that botany is "all a muddle." Still worse is the case of *Clintonia*. Under *Smilacina*, which is properly placed in *Liliaceæ*, we find "*S. borealis*, more properly called *Clintonia borealis*, is a very pretty, etc." If it is "more properly"

called *Clintonia*, the amateur who desires to be correct in his names will naturally turn to that name in the arrangement and will find *Clintonia* given there as a genus of *Lobeliaceae*. He may well consider botany, at least in this book, as "rather mixed." The talent required to give a good work upon floriculture, and that to prepare one which shall be botanically correct, are so different, that we seldom find them united in one person, and while we give the author credit for his practical directions, his ignoring of all acknowledged botanical authority and usage in retaining such names as *Dielytra*, *Washingtonia*, and others, without giving any clue to the proper names of the plants to which he applies them, induces us to advise him to submit the other works he announces as in hand to some one whose counsel will insure a nearer approach to accuracy than the present volume presents.

Fruit Growers' Meetings.—"B," Nantucket, Mass., asks why we have stopped reporting the Fruit Growers' Meetings. The reason is that the meetings themselves are no longer held. The addition of the book business to that of the paper, makes it impossible to give the necessary room to these gatherings.

The American Pomological Society.—This association will meet at St. Louis, Mo., on Tuesday, Sept. 4th. All interested in fruit culture are invited. Those wishing to become members will address the Treasurer, Thos. P. James, Esq., Philadelphia. Parcels of fruit for exhibition at the meeting, are to be addressed "American Pomological Society," care of C. M. Saxton, cor. 5th and Walnut sts., St. Louis, Mo.

Rhode Island Horticultural Society.—This society will hold an exhibition of fruits and flowers, for which liberal premiums are offered at Providence, June 20. Our friends in the Providence and other Plantations should turn out in force. This ought to be one of the most prosperous societies in the country.

California Tree and Other Seeds.—We understand that Mrs. Thos. Bridges, widow of the late naturalist, proposes to collect seeds for exportation. Her address is care of Saml. Hubbard, P. M. S. S. Co., San Francisco. We wish success to her enterprise.

Raising Radish Seed.—C. O. Mapes, Schuyler Co., N. Y.—The finest and best-shaped roots are selected and transplanted to rows 2½ feet apart, setting them down to the leaves. They should be watered at planting, and afterwards if they need it, until they start to grow. They will soon throw up stems and produce pods which are gathered as they come to maturity.

Destroying Garlic.—D. Madden, Millin Co., Pa., wishes to know how to get rid of the wild garlic.

Garden Vegetables and How to Cultivate Them.—By Fearing Burr, Jr. Boston: J. E. Tilton & Co. We have had occasion to speak of previous editions of this work in terms of praise, and can now only say that this recent one is much improved, and brought up to the present time. It contains a full account of our esculent vegetables, showing great industry and research on the part of the author, while the beautiful illustrations and general mechanical execution of the work make it creditable to its publishers. Price by mail \$2.50. Supplied at this Office.

Breck's New Book of Flowers.—Such has been the demand for this work that we have been obliged to put a new edition to press. The familiar style in which it is written commends it to popular favor, and as far as we have examined it, it possesses an accuracy of nomenclature quite remarkable in a book of its kind. Handsomely bound, 480 pages. Price by mail \$1.75.

A New Style of Earthen Pot.—Our friend, Titus Oaks, Esq., has left at our office a new style of pot for flowers, and for starting early vegetables with the superadded compliment of tomatoes already growing in them. It was just like him to show not only the pots, but how they worked, or rather how the plants worked in them. We are greatly obliged for the plants, and still more for the pots, which are both antiques and gems in their way. We are struck with the exceeding economy of the earthy material used in their manufacture, and at the same time with their strength and durability. They are not of the usual potter's clay, but of carbonate of lime, with perhaps a trace of phosphate and other material. They are nearly egg shaped, not more than the thirty-second part of an inch in thickness, of an attractive white color, just the thing for conservatory or parlor ornaments. What is marvellous about them is the low temperature at which they are baked, not much above blood heat. The kilns in which they are burnt are said to be easily transported, and not to cost over three

dollars each. The fuel is rather expensive in this region, though out West, where they burn corn, that article might be used to advantage. We speak of them as a new style of pot, though it is rather the application than the pot that is new. Indeed, the patent is as old as Noah's ark, if not older. They are just the thing to start tomato plants in, and can be had of Goose, Hen, Duck & Co., an extensive firm, with branch-houses in all the principal places in the country. This advertisement is gratis on the score of favors long since shelled out to us by this enterprising firm.

Fuller's Grape Culturist.—The great popularity of this work is shown by the increased demand for it. We know of no treatise on the grape that so concisely sets forth first principles and illustrates them so clearly. The methods of pruning the vine are numerous, but they all depend upon first understanding the manner in which the vine grows, and this the author makes so plain that all can comprehend it. The engravings are numerous and true to nature. The scope of the work covers the whole ground, from starting the vines from the bud or cutting, to the management of a vineyard. The chapter on the garden culture of the grape gives numerous plans for growing the vine in city yards, etc., and renders the work as important to the owner of a few vines as it is to the vineyardist. Price by mail \$1.50.

Downing's Landscape Gardening. This work has already established its reputation as a standard work on landscape gardening. Even our conservative friends of the London Gardeners' Chronicle commend it to their readers as among the acknowledged authorities. Our object now is to state that we are at last able to supply the demand for it, and that the recent issues contain the new portrait of the author. The book is bound in a style corresponding to the value of its contents. Every one who contemplates laying out a large or small place, should be familiar with the teachings of this work. Price \$6.50.

The Book of Roses, by Francis Parkman. Boston: J. E. Tilton & Co.—Mr. Parkman is a well-known rose amateur and contributor to our horticultural journals, and in this book he has embodied his experience with this favorite flower. The work treats upon cultivation in the open air and in pots, and gives directions for the different methods of propagation and lists of varieties which include the newer sorts. As the work is brought up to the present time, is well written and handsomely published, we predict it for a wide popularity with the growers of roses. Price by mail \$3.00.

Budding Orange and Lemon Trees.—Several inquirers. The proper time is when the tree is just starting to make a new growth, and the time of this will depend on the manner in which they have been treated. Whenever the new shoots are about two inches long, buds from wood which has become ripe and hard, may be inserted and the plant kept in the shade for two or three weeks after the operation.

Specimens of Seed.—We are always glad to receive samples of any seed that our subscribers think unusually valuable, but it is almost impossible to test field seeds unless a considerable quantity is received. An ounce or two sown in the garden is apt to be destroyed by the birds, and it is about as well to feed them to the chickens at once, as is usually done with the small packages of wheat, oats, etc., sent out by the Department of Agriculture. If enough be sent to sow a small patch in the field, it can be easily tested.

American Manufactures — The American Watch Co. of Waltham, Mass.—Every one knows that the mechanism of the best manufactures of this country is unequalled in any other part of the world. The genius of American mechanics produced the cotton-gin, the mechanical reaper and mower, the sewing-machine, and last but not least, the wonderful machinery of the American Watch Company of Waltham. This Company was established in 1850, and has grown to proportions which entitle it to a first rank among the manufacturing enterprises of the new world. It employs between 900 and 1,000 artisans of superior skill and character, and a large and thriving town has grown up in its vicinity. The factory covers over three acres of ground, and as an illustration of its extent, we may mention that it is supplied with more than 60 miles of iron pipes, and produces an aggregate of nearly 75,000 watches per annum. The founders of this Company believed that the same delicate mechanical processes which had produced such remarkably perfect results in larger machines, might be applied with even greater advantage to the production of the watch. The foreign time-pieces are made principally by hand, and except when of high cost, an imperfect article, often out of re-

pair, and of little value, is the result. Abroad, these mysterious and infinitesimal organs which, when aggregated, produce the watch, are the fruit of slow and tedious manual processes. In the results, there must of course be lack of that perfect uniformity which is indispensable for correct time-keeping. The constituent parts of the American watch, on the other hand, are fashioned by the most delicate and accurate machinery. Wheels, pinions, springs, screws, absolutely uniform in weight, circumference, dimensions, and in every possible particular, are turned out in myriads by unerring fingers of steel, and their proper combination and adjustment by skillful workmen have given the Company its high reputation. Its watches not only go with the trade and go in the pockets of 200,000 people, but they go right and go everywhere.—*Exchange.*

A Good Silver Wash.—We have repeatedly condemned the silvering fluids and powders hawked about the country, as worse than worthless, for they contain mercury (quicksilver) which puts on a silverlike gloss that is not permanent, while the mercury will corrode and injure metals to which it is applied. We have recently tested a new preparation from Messrs. Dixon, Clarks & Hallet, called "Silverine," and had it analyzed. It proves to be a genuine preparation of cyanide of silver, such as is used in electro-plating, combined with certain organic substances which hasten the reduction of the silver without the aid of a battery, and with polishing materials. Numerous trials show that it will deposit a thin silver coating when rubbed upon metals, and we think it therefore valuable for the purposes for which the manufacturers recommend it, viz., for cleaning silver and plated ware, and at the same time partially re-coating the portions of plated ware worn off. The covering is of course thin, but a frequent application is convenient, and if the manufacturers will keep up its purity and strength equal to that we have tried, as we suppose they will for their own credit and interest, it will doubtless come into very extensive use. With care not to waste it, a 50 cent bottle will last a very long time, and afford a good deal of satisfaction to house-keepers. But be very cautious of using the common silver fluids and powders generally peddled around the country. Messrs. Dixon & Co. should adopt some effective method to prevent counterfeits or imitations of their genuine preparation.—Though this preparation is perfectly safe to handle, it should not be left where it can be tasted by children, as injurious effects might result from swallowing it.

American Wines at the Paris Exhibition.—"The Lake Shore Grape Growers' Association" has made arrangements to have the products of our vineyards represented at the Paris Exhibition of 1867. The matter will be in charge of Mr. William Griffith, the well known vineyardist of North East, Pa., who will give all necessary information. "The wines must be pure, free from addition of sugar or other extraneous substance; at least two bottles of each variety, distinctly labelled, giving name of grape, location of vineyard, name and residence of maker, date, etc.; to be sent to Wm. Griffith, North East, Pa., so as to reach there not later than Nov. 1st, 1866, when they will be inspected and classified by a committee consisting of L. F. Allen of N. Y., J. A. Warder and Chas. Carpenter of Ohio, and J. E. Mottier and Wm. Griffith of Pa."

Can any thing be done with Hams not sufficiently Salted?—We fear not. It will not be safe to put them in the brine again after they are smoked. A friend of ours tried it a year or two ago, and had to make soap grease of his hams in consequence. He says the smoke turned the brine or pickle sour, and spoiled the hams. A good deal can be done toward preserving those that are not salt enough, by smoking them thoroughly and for several weeks, keeping up a fire until the smoke has completely saturated the hams.

Keep Bolts and Screws on Hand.—Every farmer should keep a few bolts of different sizes always on hand. They can be purchased of any desired size at reasonable rates, and a bolt will frequently save half a day's work. It is astonishing how much can be done with a few bolts and screws in repairing ordinary farm implements and machines. Try it, and you will never willingly be without them.

Mole Ditching Plows.—Those who have good ones should advertise them; we have numerous inquiries, but are not sufficiently familiar with the best modern ones to recommend any particular one.

Artificial Honey Comb.—W. W. Sewall, Verden, Ill., wishes to know if any attempts have been made to produce artificial comb. He thinks that a successful invention of this kind would revolutionize the present systems of bee-keeping.

Bloody Milk.—S. P. Strong, Johnson Co., Iowa. This comes from what is commonly called *Garget*, a name rather loosely applied to any inflammatory disease of the udder. Sometimes the bag cakes, and becomes hard and very sore. This generally yields to external applications, as hot soap suds, hot brine, hot arnica water (tincture of Arnica in twice as much hot water), with all the rubbing and kneading of the bag the cow will bear. At other times the udder is only a little tender, and there is internal bleeding coming from sores. The hot bath is good for this also, but it is well to accompany it by a dose of epsom salts (1 lb.) and ginger ($\frac{1}{2}$ oz.) given in a bran mash, well salted to disguise the taste. Where it can be obtained, the root of *Phytolacca decandra*, (Poke-weed or Garget-root,) is excellent for any form of Garget. Three or four ounces are cut up fine, and fed with oats or roots.

For Feeding Young Calves.—M. N. Russell writes: "I think a small trough is preferable to a pail, any way it can be fixed. M. Hester's plan, on page 130, March number, is no doubt a good one, but by using troughs the milk can be poured in and the calf left to drink it at its leisure; it also saves trouble of waiting for the pail until the calf is done."

What is the matter with the Little Pigs?—In some sections of this State there seems to be some trouble with the little pigs. Whole litters die a few hours after they are born. It would seem to be a kind of epidemic. Can any of the readers of the *Agriculturist* throw light on the matter?

To Prevent Hens Eating Their Eggs.—Give plenty of lime, old plastering, oyster shells, powdered bones, etc.; supply a little animal food, such as bits of fresh meat from the table or any fresh meat chopped fine; besides, provide good large nests well filled with leaves or hay, and set in snug darkish corners, away from observation. Then your hens will not eat their eggs and will lay abundantly.

Experience with Hens.—"P." writes: My experience with hens during several years has led me to the following conclusions: 1st, Hens, well fed and cared for, usually lay the first season, daily, small or medium sized eggs, until they take a notion to set, which is generally when they have laid two or three dozen eggs. If not permitted to set, they will begin to lay again in two or three weeks. Some hens, however, do not incline to set very often—these, of course, will not lay so constantly as those which are more ambitious to realize the fruit of their labor.—2d, The second season, hens lay large eggs, quite too large to sell by the dozen, but seldom or never oftener than every other day.—3d, Pullets hatched from eggs laid by hens more than twelve or fifteen months old, are apt to be like their mothers—to lay large eggs, but not daily. . . . Therefore, I would never keep a hen through the second winter, and never set eggs of hens after they have moulted, or of those that are more than a year and a half old.

"Quit, quit"—A Turkey Item.—Mrs. Sarah Fries, of Ontario Co., N. Y., is a very successful poultry raiser, having sold the past winter \$400.00 worth of turkeys alone, all the product of one season. If any one can report a greater crop, Mrs. Fries will continue to cry "quit, quit" till she tries again.

No Water in Lime Stone.—The N. Y. Farmers' Club.—"W. A. F." writes: "Mr. Quinn is reported in the Tribune as saying, at the Am. Institute Farmers' Club, that 'the action of fire upon lime is to expel about one half its weight of water and carbonic acid,' and that the farmer who would adopt Mr. Williams' views and apply ground limestone, 'would have to haul a large quantity of water combined with the lime.'—Is this so?"—The reporter adds: "These views of Mr. Quinn seemed to be unanimously sustained by the members present."—No. It is not so. There is no water at all in limestone, the unanimous opinion of the Farmers' Club to the contrary notwithstanding. Limestone contains over 40 per cent of carbonic acid gas, and this is expelled by heat alone. The Farmers' Club of the American Institute is famous for bringing out good practical ideas, as well as absurdly impracticable ones, for advocating sound theories as well as very unsound and absurd ones. It is entirely safe to weigh whatever is reported of its discussions in the scales of practical common sense, and to refer scientific statements to the text books. For if all the ridiculous practical statements and false science of the "N. Y. Farmers' Club," from the doctrine of the *Progression of Primaries*, to the expulsion of carbonic acid from soda by heat alone, and the great percentage of water in limestone, which in their day have been implicitly believed, were to be brought up afresh, it would so disgust sensible people, that the reports

of the proceedings of that venerable institution would lose many readers. When a man states things as facts, let him be sure of his facts, and when he guesses, say so.

Sea Weed as Manure.—J. Albee.—All the organic products of the sea, whether vegetable or animal, are of great value as manure. In the fresh state the bladder weeds, kelps, etc., contain much water. A portion of this is rapidly evaporated, and in this condition these weeds are worth nearly or quite as much as common yard manure. The eel grass is not worth so much, yet is valuable. All contain quite a large percentage of animal matter in the little polyps, shellfish, sponges, etc., which are attached to them. They are best employed, as a general thing, in a compost with muck or soil.

Don't neglect to Sow Plaster.—Red Clover is the great renovating crop of American agriculture, and plaster is the well tried manure for clover. The plaster, in most sections, costs but little, say from \$3 to \$5 per ton, and from 100 lbs. to 200 lbs. is sufficient for an acre. We have now machines that will sow from fifteen to twenty acres a day, and the farmer who neglects to sow plaster on his young clover, omits one of the essential means of enriching his soil—for plaster increases the growth of the clover, and clover enriches the farm. Peas, like clover, are a leguminous plant, and on most soils plaster has a beneficial effect on this crop. It may be sown broadcast, say from one to two bushels per acre at the time of sowing the peas, or if they are already up, sow the plaster broadcast over them. There are those who think this the better way—that the plaster does most good on the foliage. Hence in sowing plaster on corn it is usual to wait until the plants are up a few inches high, and then scatter a tablespoonful or so on the hill and over the plants. We have experimented a good deal with manures for corn, and while many artificial manures greatly increased the crop, plaster is the only fertilizer that has given us an increase, sufficient at 50 cents a bushel to cover the cost of the manures employed. When corn usually brings a dollar a bushel bone dust, superphosphate, and guano, if of good quality can be frequently used with profit. But plaster can almost always be used on dry upland with advantage, even if the corn brings only 40 cents a bushel.

Woolen Factory Waste.—"S. K." Such waste as you can get, though full of seeds, is still valuable manure. If it contains a great deal of wool, it is a very strong fertilizer. Used to litter animals in the stable, the weed seeds would probably be killed, but the manure would be so rich, that the most economical way to use it, would be to farther compost it with muck, or soil.

Buckwheat as a Green Manure Crop.—"H." On very poor and light land, buckwheat is by far the best common green manure crop. Oats do very well on soils of a little better quality, and clover is best for clayey soils that need organic matter. The amount of the crop varies exceedingly. 150 to 200 lbs. of good Peruvian guano will almost uniformly ensure a crop of buckwheat, and two crops may be plowed in in one season. Oats need a little more guano, with the addition of some ashes and plaster perhaps, and clover needs very thorough plowing. It may also have a dressing of lime plowed in, also lime harrowed in, and an application of guano and plaster at the time of sowing, which may be in September, or you may plow in a crop of buckwheat or oats, and sow clover in the fall.

Bone Dust in the Garden.—E. Wheeler, Kalamazoo Co., Mich., has a quantity of bone dust and asks how to apply it. If used at planting, it will not hurt the seeds, but the best way is to spade it in abundantly—a peck to a square rod is a fair quantity, and its effects will, in some cases, be manifest for years.

The Barberry as a Hedge Plant.—The Wallingford Circular says: "One of the wants of the agricultural community at the present time is a good hedge-plant; one that is reliable under all circumstances and conditions. Nearly every one that has been tried thus far, has exhibited some radical defect that unfits it for the purpose. A hedge-plant, to become popular, must be perfectly hardy, and easy to propagate. It should also be vigorous enough to grow well in ordinary soils without manure. It should be thorny, to keep cattle from hooking it, and strong enough to keep them from breaking through. Finally, it should be low enough to require little or no pruning. The common barberry (*Berberis vulgaris*) combines these qualities better than any other plant I am acquainted with. The barberry is a native of the northern part of Europe and Asia, but has become thoroughly naturalized, and is now found growing wild in the waste grounds of New England. It is a remarkably hardy plant, thriving well in a great variety of soils, and is said to live for centu-

ries. It has a shrubby habit (growing from six to ten feet in height), yellowish thorny wood, leaves in rosettes yellow flowers on drooping racemes, and scarlet oblong berries, very acid, but making delicious preserves. We have a barberry hedge on our grounds at Wallingford, Ct., 25 rods long, and 9 years old from the seed. Two rows of plants were set, the rows one foot apart, and the plants one foot apart in the rows: alternately, to break joints. This hedge has been clipped a little, two or three times, to keep it even, and is now six or seven feet high, with a firm, compact base, perfectly impervious to the smaller animals, and stout enough to turn ordinary farm stock, except for a short distance at one end where the soil is quite thin. On our grounds at Oneida we have a barberry-hedge 50 rods long, and seven years old from the seed. In this case but one row was planted, and the plants were set one foot apart. It has been kept clean with the cultivator, and clipped a little, once or twice, and is now five feet high, thick and compact at the base, and already so strong that the fence was taken away last fall, leaving in its place only a slight railing of a single board, six or eight inches wide, as a temporary guard, until the hedge can gain another year's growth, it being situated on a highway where cattle are passing daily. An important item in regard to this plant is, its habit of sending up suckers from the bottom, by which, in a few years, it comes to have a base from six to twelve inches in diameter."

White Willow for Fences.—In the fall of 1864 we described in the *Agriculturist* some White Willow hedges and fences, which we saw in Illinois, and before and since that time many have tried them—no doubt a good many on account of the favorable report which was made in this paper. We know that in Illinois, if good cuttings are planted and treated well, the willow will make a fair fence—in some cases an excellent one in a few years. On poor dry soils it will not do so well, if well at all, but with good care we know it will live and grow. If any body knows where the true White (Gray or Powder) Willow has been well planted, and where it lived and did well for two years, and then after several years more has proved not to be good as a live fence or hedge, we would like to know about it, how it was treated, and wherein it failed.

A Screen for Out-Buildings.—J. B. Bowman, Alkoon, Norway Spruce, Hemlock or Arbor vitae, will each of them make a screen close enough. The first mentioned is the most rapid in its growth. We do not know who has the seeds you ask for.

Thorns from the Seed.—T. Braybrook, Allen Co., Ind. The seeds of the White, and all other Thorns, do not come up the first year after planting. Mix the seed with earth in a box or other vessel, and bury it for a year, and the next spring sow it without allowing it to become dry.

The Sunflower for Fuel.—Hosea Barnes of Kenosha Co., Wis., writes, that seeing an article in the Country Gentleman on corn for fuel, he wishes to suggest an economical substitute. "There is perhaps no annual plant which will furnish so much woody fibre as the sunflower, yet I have never heard of the stalk and seed of this well known plant mentioned as fuel. It requires but little cultivation; a great quantity will grow on an acre, and the seed is valuable, if gathered when ripe, for feed, and much more valuable than corn for fuel, as it contains a great deal of oil. After the heads have been gathered in autumn, let the stalks remain until the frost kills them, and then gather, cut and dry, and in connection with the seed you have a stock of fuel. Sunflowers will do well planted as thickly as corn. Try it, and see if it is not cheaper and better than corn at 20 cents per bushel, or wood at \$12 per cord." It must be remembered, however, that there are few crops so exhausting to the soil as this, on account of the great amount of potash it takes up.

Grafting the Wild Grapes.—T. H. King, Tompkins Co., N. Y., is clearing land for a vineyard, and asks if it would pay to graft the wild vines already there. We should say not; among other reasons, we do not see how it is possible to prepare the land properly for a vineyard and leave the old roots undisturbed.

Number of Vines to an Acre.—J. Grable. If put 6 feet each way it will take 1210, and if set 6 by 8 feet, 905 plants to the acre.

Chickens in Cold Graperies.—"A. S.," of Chester Co., Pa., writes: "After laying down the vines in autumn, I put about twenty hens into a small cold graperie, not more than 25 feet in length by 10 in width, and find they have plenty of room, and furnish a beautiful supply of fresh eggs during the whole winter.

The hens can be set about the first of February, and the young chicks will do well, making early spring chickens for market, or will come in as laying hens early in autumn, and may be depended upon for eggs the next winter."

Ailanthus Injurious to Pears.—W. I. Allen, N. Y., asks if "an Ailanthus tree planted in the midst of and overshadowing a lot of dwarf pear trees, would have any injurious effect upon them." Yes, it would probably injure them seriously—and so would any other tree, if the dwarfs are as near together as usual. If he fancies the Ailanthus, let him put it by the roadside.

Bad Luck with Cherry Pits.—H. L. Southworth, Utah Co. The Mahaleb pits probably became too dry, from the overland journey, to grow. Get them in winter if possible, and mix with earth, in a box, exposed to cold but sheltered from rain. The advantage of the Mahaleb is, that it is a dwarfing stock.

The Raspberry from Cuttings.—J. T. H. Waite, Somerset Co., Md., asks if he can propagate the Raspberry from cuttings. Green wood-cuttings, in moist ground and properly shaded, will grow.

Rust on the Raspberry.—E. A. King. Last year we had several other complaints of this trouble, besides yours. The rust is a parasitic fungus which grows upon the leaves, and probably finds some seasons more favorable to its development than others. We have not known any remedy to be tried, but should make an experiment with sulphur on its first appearance. If any one has found an effectual cure, we should be glad to hear of it, as the trouble threatens to be a serious one.

Winter Cherries.—"Subscriber" asks what these are. The Winter Cherry, also called Strawberry Tomato, is a species of *Physalis*, a plant closely related to the tomato; it bears a small round berry as large as a medium sized cherry, and quite enveloped in the enlarged calyx or husk. These berries have a very fruity flavor, and will keep for a long time, if allowed to remain in the husk. They make a very pleasant preserve with sugar. The plant is raised as easily as the tomato, and is very fruitful. The seed is sold by all the dealers, who usually catalogue it as Strawberry Tomato.

The Snail Flower.—A correspondent in Pomeroy, Ohio, succeeds in growing in the open air the Snail Flower, figured in February last. The seed is started in a hot-bed, and the plants transferred to the open border when the weather is warm. "It does not flower the first season, but if kept over winter from frost and damp, will grow luxuriantly and bloom the second year, and I think it will continue to bloom perennially."

Propagating Roses.—Hattie.—Layering, is the surest way, but there are some Roses that require two years to root. Make a slanting cut near a bud in the part that goes into the ground. See that the soil is rich and keep it from becoming dry in summer, by a mulch of moss or similar covering.

Rose Layer.—Mrs. L. H. James, Hillsborough Co., N. H. If the layer was put down in September, it was quite late and may not be rooted. A little careful digging will determine this point. Should it not be rooted, let it be another year. The shoot should have been "langued" or cut half way through with a sloping cut with something put in to keep the wound from closing. This may be done now, if neglected then. If well rooted, the layer may be removed to a good, rich soil. From the description we guess it is Queen of the Prairie.

Propagating the Oleander.—L. Taylor. Young growth, taken just as it is becoming firm, will root with great ease in warm weather. A very common way is to put the cuttings with their lower ends in a bottle of water, and when rooted set in rich soil.

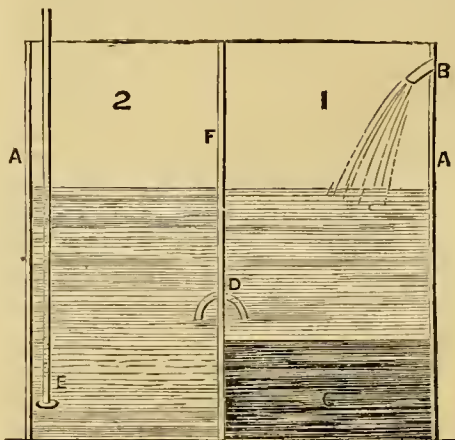
Bud-eating Birds.—J. Hyde, Washington Co., Ill., finds his peach twigs wholly stripped of buds; thinks it was done by a bird, and wishes to know what bird does it. Partridges will sometimes, in a scarcity of food, eat the buds of apple trees, but we never knew them to trouble those of the peach.

Newspapers on Strawberries.—It has become the fashion of late for the secular and religious papers to have an "Agricultural Department." Some papers by selections from the standard Agricultural Journals, make a very readable column, while those which attempt to be "original," are frequently so in every sense of the word. The N. Y. Times has an article on "How to Raise Strawberries," in which it gravely says: "Three things were suggested to our mind while looking about the fields of Mr. Lambert, as being absolutely es-

sential to the successful and profitable cultivation of strawberries, namely, a sandy soil, a liberal supply of manure, and clean cultivation. These things comprehend all the important requisites in raising a remunerating crop of strawberries. Clean cultivation and manuring bountifully will prove eminently satisfactory on heavy soils; yet, a light sandy soil is the place for this kind of fruit."—There are some strawberries that will succeed on sandy soil with plenty of manure, but these are not, as a general thing, the choicer varieties, and though one may by artificial means overcome the natural barrenness of a spot, no one who knows anything about strawberries, would ever put a sandy soil down as an important requisite. A good rich, not stiff, soil is necessary, if one would grow the best fruit.

House Sewage in the Garden.

Those who have not tried it have no conception of the utility of liquid manure when applied to growing plants. Many of those who buy poudrette, and other commercial fertilizers, probably allow materials to run to waste on their own premises, which are equal in value to those they purchase. All the house slops, including sewage of all kinds, should somehow find their way upon the land. In January last, page 14, we have given methods for utilizing the contents of privies, and in August, 1865, a plan for a tank for liquid waste was shown. The method shown in the last named article is only practicable in peculiar situations. In England, much more attention is



given to saving domestic manures than with us, and we give, from the Gardener's Magazine, an engraving of the form of receptacle employed there. The cistern is built with two compartments, and deep enough to secure a good fall for the contents, which enter at b, into the compartment, 1. Here the coarser portions settle at c, and the more liquid portions overflow through the syphon, d, into the other division of the tank, and are removed as wanted for use by a pump attached to the tube, e. The sediment at c, is removed once a year, or as often as it accumulates in sufficient quantity, and is highly valuable as a fertilizer.

Deodorizer.—"T. C. H." asks: "What will deodorize the contents of a privy, as soon as applied?"—An abundance of good loamy soil will do it as quickly as any thing, and bring the materials into a condition to be shoveled over, and used as manure immediately, though it is better to let it lie in a heap a few days. Dry swamp muck and finely crumbled peat require a less weight to affect the same result—hence make less cartage—but do not act so promptly as fresh soil.

Bushels of Corn in the Ear.—A bushel of ears of corn is obviously a measure full of ears of corn, heaped a full peck above the rim; but a bushel of corn in the ear is, as obviously, a bushel of corn, with the cobs counted out. By common consent the cobs that hold a bushel of corn, are allowed to weigh 12 pounds, and so, where the weight of a bushel of corn is fixed legally at 56 pounds, that of a bushel of corn on the ear is legally fixed in many States at 70 pounds.

Our Farm of four Acres.—This pleasant account of experience in farming in a small way, has a freshness of style which makes it a readable work to any one; and to those who have only limited possessions, it offers many useful suggestions as to the manner of making the most out of a small amount of land. Price, by mail, 60 cents bound; 30 cents in paper covers.

Book on Indian Corn.—The value of a thorough book on this subject has long been felt. The one before us in part supplies the want, though the subject is so great that no one could expect it to be exhausted

in a 12mo. of 300 pages. The author shows himself quite familiar with the only literature upon his theme, which is really reliable, viz: the articles in the agricultural journals. From these and from other sources not so easily accessible, a mass of practical information is condensed, and very well arranged. No cultivator of the great American cereal can peruse the volume without learning much which he may well apply in the preparation of his soil, selection of his seed, cultivation, harvesting and feeding of his crop. Sent by mail for \$1.75.

Doty's Washing Machine.—Among other commendations of our premiums, R. F. Roberts, of Racine, Wis., writes: "The American Agriculturist Premium Washing Machine, sent me for subscribers, has done the washing every week since it came, for a family of eight persons, without the least hand rubbing, in less than half the time, and with a good deal less than half the labor, it would have required with the washboard. It can not be too highly recommended...."

Commercial Questions.—"Inquisitive." We cannot undertake to answer queries about the prices of oils and other articles not in the line of our experience.

Unfermented Wine.—H. Neff, Huntingdon Co., Pa. We cannot tell you how to make it, as there is no such thing as unfermented wine. Any kind of syrup may be called wine, but it is a misuse of the term. Wine, according to the authorities we accept as guides in the use of language, is defined as the fermented juice of the grape. When used for the juice of other fruits, the name of the fruit is always mentioned, as currant wine, etc. Unfermented grape juice is called "must."

Blackberry Root.—We have inquiries as to which variety to use the root of medicinally. It makes little difference which. All are astringent.

The Medical and Surgical Reporter.—This has always been a welcome exchange, not only for its medical news, but for general scientific intelligence. Our professional readers will be glad to learn that this excellent medical journal is now enlarged to 40 pages, and is published both in New York and Philadelphia weekly, at \$5 per year. S. W. Butler, M. D., Philadelphia, is the principal editor.

Red Ants.—"H. P." writes: "I have tried various remedies—'Persian insect powder,' and sponges dipped in sugar and water, etc., but the cry is still they come. What will prevent them?" (See page 228.)

Glue—Its Preservation in Hot Weather.—"C. H. E., Rockingham Co., N. H., writes to the American Agriculturist: "It will be useful and convenient for pattern and cabinet makers and others, to know that if a piece of zinc, the usual thickness 1-6th of an inch, and 2 or 3 inches in diameter, be placed in the bottom of the pot containing the glue, and kept there, it will prevent the glue from becoming putrid and spoiled. I do not say positively that it will prevent putrefaction in every case, but I saw it tried with perfect success during last July and August in a shop where eight or ten men used glue every day."

Pictures Sent.—A. L. Skinner, Panola. No clue to her State. The sketches show an appreciation of humor, but a lack in knowledge of drawing. Our best advice is, to study good drawings and learn to draw outlines correctly before attempting elaborate work.

Not "He," but Soap.—E. Northup, of Fairfield Co., Conn., sends a specimen of a substance found in a brook. As the material burns, he jocularly inquires if he has "struck fire." The article in question is apparently *Adipocere*, a soap-like compound, sometimes found where animal matter is long under water or buried in a wet place. Whole bodies have been found to be changed into this substance.

To Start Rusty Nuts.—A little carbon oil (kerosene), dropped on, will penetrate the threads, and the screw can be immediately turned.

Big Crops.—The Salt Lake Telegraph is reported as saying, that on two and-a-half acres President Young raised last year 750 bushels of peaches, 400 bushels of apples, 22 bushels of plums, 25 bushels of strawberries, 2 bushels of pears, 25 pounds of cherries, 1,875 pounds of grapes, and gooseberries, raspberries and currants in multitude.—The absurdity of this will be apparent when one foots up the figures and finds, allowing 56 pounds to the bushel for cherries and grapes, that the product of these various fruits is very nearly 500 bushels per acre, and more than 3½ bushels to each square rod.



REAR ELEVATION OF BARN.

Improving Old Barns.

Our readers have been presented of late with several excellent plans for rather expensive new barns. In connection with these, the principles which should be kept in view in building, or indeed in using barns and stables, have been discussed. No doubt many of the readers of the *Agriculturist* have given these plans far less study than they would have done had they been cheaper and simpler. We fear they forget that a principle is the same, whether fully carried out or not, whether applied on a very humble, or on a grand scale. No one of the large plans may be such as any of our readers would like to build after, yet each contains hints which will be of great value to any one who proposes to build even a very humble structure of the kind.

The 30x40-foot barn is an "institution" known from one end of the country to the other, almost—certainly throughout the older Northern States. They are unsightly, inconvenient, and poorly adapted to any use but that of storing hay and straw. A barn of this size may be constructed so as to be very convenient for a small farm—but those of the usual style, with a wide bay, a narrow barn-floor, and a still narrower row of stables, are poor, inconvenient barns. "F. W. L.," of Monroe Co., N. Y., sends us the drawings and descriptions of a way in which he cheaply converted an old barn of this description into a convenient and excellent one.

MESSRS. EDITORS,
—We see in all parts of the country the old-fashioned 30x40-foot barn, built years ago, with a hay mow at one end, stables

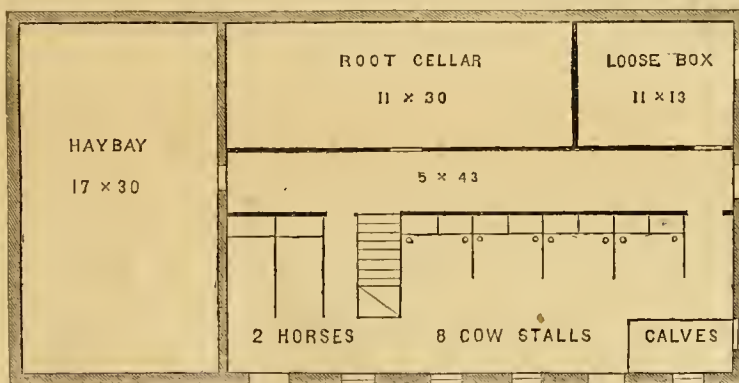
and granary with loft over them, at the other, and barn floor between. Such a barn is almost no barn at all, and having such a one in tolerable repair, I set myself to improve upon it without going into great expense. With a couple of

Jack screws we raised it up eight feet from the ground, underpinned it with a good wall, and added 20 feet to the length at the end used for stabling, making the basement of the building 30x60. We also built a cross wall at the edge of the hay bay, and covered it with matched boarding. We laid a matched floor over the entire basement, except the hay bay, which goes to the ground, and graded a wagon way up to the great doors. In the basement we made a



PLAN OF MAIN FLOOR AS ALTERED.

passage way 5 feet wide, lengthwise eleven feet from the front wall, extending from the east end to the hay mow. The space on one side of the passage for 30 feet is boarded up to the ceiling with matched boarding, and is used for a root cellar; this leaves room for a box stall at the end. At the other side of the passage we have our stables for cattle and horses, with stairs descending into the passage. This is a very simple improvement upon an old barn, and may be



PLAN OF BASEMENT.

varied according to circumstances. I have found mine very convenient and comfortable, and not too expensive for an ordinary farmer. Many farmers think they can not build a basement on level ground; mine is level, and I found no diffi-

culty in getting into it with any load that my team can draw on my farm. I send a rough diagram which perhaps you can make use of.

Walks and Talks on the Farm.

No. 30.

This is a great storm, but I do not think it will do any harm. We have had charming weather and the ground is quite warm. A heavy snow like this looks rather hard, but on land that is dry and warm, plants will stand considerable cold weather. I have five acres of barley that was sown on the 12th of April. It is now (April 24th) just out of the ground, and the Squire "hopes I shall not lose it," as he did an early-sown field some years ago. I have no fears. If the ground was wet and cold, the snow would probably injure it. An old traveler says, if you will only keep your feet and legs warm, you can stand any amount of cold. It is so to a certain extent with plants. If the ground is warm, the sap in the plants is warm also. In warm weather the pores of the leaves open, and the evaporation of moisture from the leaves proceeds rapidly, but when we have a sudden cold these pores close up almost entirely, and the warm sap in the plants does not escape. The heat is retained. Even tender plants, such as geraniums, if sheltered from the winds and having good "bottom heat," will stand two or three degrees of frost.

In this climate, which is so changeable in the spring, we should direct our attention to making the ground as warm as possible. I do not think we can afford to heat bricks and bury them in the soil, in order to warm the land, as was proposed some years ago, but we can drain off all the surplus water and stir the soil to let in the air and sunshine, and in this way we can gain two, three, or even five degrees of heat.

In six hours after it commenced to rain, I went to the underdrains and found them discharging to their utmost capacity. The drains were cut last spring, and though they carried off a great deal of water, they did not act as quickly as I expected. It took sometime for the water to soak through the soil and reach the tiles. But now the ground is very porous. The drying effect of the drains has extended to a greater distance. Little fissures have been formed all through the soil, and the rain percolates through them very rapidly and passes into the drain. Old ditchers tell me that this is almost always so—that you get more benefit from underdrains the second year and afterwards, than you do the first season. At all events these drains are now running full, and it is "fun" to see the water come spouting out of the main drain five inches in diameter. They say I have "ditching on the brain," but even the Squire admits that my big ditch "will pay." By the way, I had a little pride in sowing this five acres of barley so early. When I came here it was the wettest land on the farm. I cut a main ditch five feet deep, and have eight underdrains running into it. This is now the driest and mellowest land I have, and if I do not get a good crop of barley, I shall be mistaken.

The experiments of De Candolle, alluded to in the *Agriculturist* for April, in regard to the temperature of the soil at which plants germinate, should be repeated in this country. We do not pay sufficient attention to the temperature of the soil. We keep a record of the weather, but overlook the soil. If meteorological observers in different parts of the country

would give us the temperature of the soil and state its character, we should, I am persuaded, soon be in the possession of facts of great value. Three years ago I found the temperature of the soil in the garden on the 30th of April to be 52°; and on the 19th of May 53°. The thermometer was placed upright in the ground—the bottom being 12 inches from the surface, and the top of the hole being covered with a sod to keep out the air. I placed a thermometer, horizontally, two inches deep, and covered it with surface soil, and it marked 59°—showing that the surface soil was 6 degrees warmer than that a foot deep. I presume the surface soil, say half an inch deep, would be warmer still.

We are going to have an Agricultural School in this neighborhood. The parties have bought one of the best farms in the town, paying over \$125 an acre for it. They propose to teach the boys the ordinary branches, and in addition show them how to perform agricultural operations. They design to have them work on the farm three hours a day. I wish them the fullest success, though I think that a farmer's boy can learn how to work at home as well as at an institution of this kind. For city boys who wish to become farmers, such a course of training is all very well, but I should not be willing to pay much for their labor. On a farm, work must be done just at the right time, and it will not do to wait for the boys. Fancy a field of hay all ready to carry just as the bell rings for school, and the day's work of three hours is over! If the farm manager could stand it, I should like to take a term with him myself to learn patience.

The best article on American Agricultural Education I ever read, is in the *Agriculturist* for April. I do not know which of the editors wrote it, but whoever he may be, he exhibits far more practical knowledge and common sense than any other writer on this subject that I am acquainted with. The fact is, as he says, the real education of the future farmer must be obtained at home. Let him be encouraged to learn the use of mechanic's tools, so that he will not in after life be under the necessity of running to the blacksmith, the wheelwright or the saddler for every little repair that may be needed.

I was examining my cultivators the other day to see if they were all in order, and while tightening the bolts, a farmer called with a package of marl in his hand that he wished analyzed. "I understand," said he, "that you are a chemist."—"Well not much of a one," I replied, "and I was just wishing, not that I had studied chemistry less but mechanics more. Here on the farm I find it more useful to know how to put a machine together than to take a marl to pieces—to repair a cultivator than to analyze a soil." And this is so. I would on no account give up my chemical training, but chemistry is not, as some would have us suppose, the one grand thing necessary to make a farmer. Give a farmer's son all the scientific education you can, but do not neglect to teach him those things which he will most need when he comes to carry on the practical operations of agriculture. I think these things can not be taught him at an Agricultural College any better than at home. Let him have the best and most liberal education you can afford to give him, and above all let it be thorough.

I was showing a farmer's son the other day a plan for a work shop. He objected to it on the ground that it was too large. "On our farm,"

he said, "they would have it full of old harrows, ox-sleds and hay rakes before it had been built a week. I would have it so small that no one could get into it but myself." I told him that I wanted it large enough to draw in a wagon or a reaping machine. But I am not sure that he is not right. A work shop ought to have a stove in it, and if it was too large it would be difficult to keep warm. Perhaps a better plan would be to have a small work shop with a very large ante-chamber. The latter if desirable might be merely a shed in which every thing that needed repair might be placed as soon as it was broken, and where it could remain till we had leisure to attend to it. Such work ought to be done in rainy weather; but the trouble, on my farm at least, is that the things that you need are in different places, and you stand a chance of a good soaking before you can get them together. Now, if we had a large shed connected with the work shop and tool house in which we could keep plank, boards, sticks of timber, poles and every thing of that kind that is needed, many an hour that is spent listlessly hanging round the barn could be turned to good account. One corner of such a shed could be profitably occupied as a receptacle of all the broken tools, machines, pieces of hard wood, etc. There are many such things that are now either burnt up or lost that would often prove useful, if they were kept where they could be easily found.

I wish some one would get up a really good "tool chest" with an assortment of the necessary tools of the best quality. Those that are now sold are generally a miserable farce. There is plenty of varnish on the chest, but the tools inside are seldom what farmers need, and what there are, are of poor quality. I was talking to Mr. Judd on the subject a few months ago, and urged him to get up a really good chest, properly arranged, with a choice set of tools. He appreciated the importance of encouraging farmer's sons to learn the use of tools, and of having them so arranged in the chest that keeping them in their places, would do much to develop habits of order and system. His boys have a complete tool chest, filled up with the best tools, which he says are far the cheapest in the end, though costing most at the start. No one else is allowed to touch these tools for any purpose, and the boys have a reward for keeping every tool in its place, from which a fine is deducted for every one found out of place when not in use. He said it not only educates them in the use of tools and in keeping things in order, but also furnishes them much amusement and healthful occupation. Even the lads of 7 and 9 years of age are quite expert in handling tools.—I really wish he would get up such chests for the benefit of the young farmers of the country, and put them on sale.

I got a letter to-day from the agent of the "Boston Bone Flour." He does not like what I said in regard to the value of the article as a fertilizer. I should really be very sorry if anything I may have said should discourage the use of artificial manures. I had no such intention or desire. On the contrary, I would do all that I could to favor their general introduction. To me farming would be stripped of one of its pleasures if I could not get artificial manures. I have used them more or less for over twenty years, and fully appreciate their value. I know also the difficulty of manufacturing a good manure, and selling it at a price that farmers can afford to use it. I would encourage all honest efforts in this direction. I would pay more, and

would advise other farmers to pay more than the manures are actually worth for a year or two, in order to encourage their manufacture until the business gets thoroughly established. I would show no mercy to humbugs, but would extend the right hand of fellowship to all intelligent and honest manufacturers. They should understand what farmers want, and then devote their energies to supply it at the lowest cost. What we want in an artificial manure is ammonia and phosphates, and the more immediately available these are, the better. The reason why we need these two ingredients more than any others is this: *The main difference between good and poor barn-yard manure is that the former contains more ammonia and phosphates than the latter.* I will not say that it would not be cheaper to make richer manure by feeding the animals more grain, rather than to buy ammonia and phosphates. That is not now what I am talking about. My barn-yard manure is not as rich as it ought to be, and this has been the case on the farm for many years, and the quickest way I can make it rich is to use artificial manures that will supply the deficiency.

I received a letter on this subject a few days since from Mr. Thorne. He grows a great many roots for his thoroughbred cattle and sheep, and uses large quantities of artificial manures. He says: "I see you were somewhat astonished, as well as myself, at the exorbitant price asked for the Boston Bone Flour. Bone dust reached such a price this spring, that I was forced to try and find a substitute, and have just ordered quite a large quantity of manure from Chicago, made from the carcasses of animals that die in the cars and otherwise, which, after being tried out, are ground up, flesh and bone together. This is mixed with an equal quantity made from blood and haslets obtained from the large packing houses. My own impression is, that it will prove a very valuable manure, though probably not as lasting as pure bones, but quicker in its action. I remember to have seen some wonderful effects in England from the use of blood manure, and do not see why this is not very much the same thing, with the addition of a certain percentage of bones. It costs me delivered less than \$40 per ton."

The manufacturers of Bone Flour say, the reason why they have to charge so much for their manure is, that they have to pay \$36 per ton for bones. The agent told me that they get their bones principally from Africa and from the Southern States. The question with farmers is not what the bones cost the manufacturers, but whether they can afford to use the manure made from them. The price is higher now than a year or two ago, while farm produce is much lower. We cannot afford to pay as much for manures now as we could a year ago, and it is certainly very unreasonable to ask us to pay more.

A day or two ago I got a couple of the revolving land-side plows advertised in the *Agriculturist* for March. They were warranted to run easier and do better work than any other plow. I thought I would give them a benefit. I have ten acres of rough land that has not been plowed for ten years. It is so hard and stony that the previous owner of the farm had shrunk from attacking it. It did not produce grass enough for a good flock of geese, and when the rain stopped us from sowing barley, I concluded to see what could be done with this old grass field. Two of the men took the two new plows, and the other one of the best and strongest of our old ones. After breakfast I went up to see how they got along, anticipating

trouble. "Well, Thomas," I asked, "how does the new plow go?" "It's the best plow I ever see in this country." Thomas is an Englishman, and of course has to qualify his commendations. Hanna was less enthusiastic, but could find no fault with it, and at night asked me to let him have the new plow. Now this is a great triumph. It is the first new thing that has given satisfaction to my men. But the plow is an excellent one, and they had sense enough to see it. It runs very easy, turns over a handsome furrow, and lays it up in such a way as to afford, when harrowed, a large quantity of loose soil. The revolving land-side plow works admirably, and if it is not liable to get out of repair, is a decided improvement.

How much land can a man plow in a day? I have heard men tell of plowing two acres and a half, but never saw it done. In England, where they plow narrow furrows, say 9 inches wide and 6 inches deep, an acre is considered a fair day's work, taking one day with another. Here we plow, unwisely as I think, much wider, but do we not lose nearly as much time in resting the horses as would make up for the difference? Narrow furrows, say 10 inches wide and 7 inches deep, turned over at an angle of 45°, is both theoretically and practically the best style of plowing; and if we plow wider, we should go deeper, and unless we use three horses, no ordinary team can keep steadily at such hard work without injury. With a team that walks naturally at a good pace, it is better to plow narrower furrows and let them walk at a fair speed, than to tax them too heavily with a wide furrow, which necessitates their resting every other bout. The time lost in this way is far greater than is generally supposed. But I am regarded already too much in the light of an innovator to attempt anything more than a very gradual change. I find it better to let men do pretty much as they have been accustomed to. Still I would really like to know what is about the average rate of plowing in different parts of the country, and what hours are kept. By looking at my record, I find that we plowed a thirty acre field of corn stubble for barley, with three teams, in 7½ days—say 30 acres in 22½ days, or just 1½ acre per day for each team. Hours, 6.45 to 11.45, and from 1.30 to 6.30, say 10 hours a day. With a furrow slice 10 inches wide, it takes about 16½ miles of travel to plow an acre and a half. In a field 200 yards long the experiments of the Earl of Mar, as given by Sinclair, show that over two hours are lost in turning. Even, then, if no time is allowed to breathe the horses, they would have to walk steadily along at the rate of over two miles an hour to plow an acre and a half. I doubt very much whether farmers really plow as much in a day as they think they do. They do not keep an exact account of the time, or measure the land accurately.

This want of accuracy I fear is rather an agricultural characteristic. "My cows give ten lbs. of butter a week," said a neighbor the other day. "That is capital," I said, "but do you weigh the butter?" After a little hesitation he confessed that he did not, but felt sure from the size of the roll that there was at least as much as he said. He is a good farmer, and takes much pains with his cows, and it is not improbable that he gets the amount of butter he says, but it is a loose way of reckoning. It is a pretty good dairy that averages 6 lbs. of butter a week from a cow. Of course it ought to be more, and easily might be, but in how many dairies is it so?

We should aim to get a higher general average of farm produce. It is not an occasional large yield that is the test of good farming, but a high general average. I have had portions of a wheat field that would go over 35 bushels per acre, while the average of the whole crop was only fifteen. Last year one of my sheep sheared 12 lbs. of washed wool, while the average of the flock was not quite 5 lbs. We hear too much of the exceptional large yield, and too little of the low general average. I think we are improving, but our general system of agriculture is still lamentably defective. What we most need is faith—faith in good culture, in high manuring, and in liberal feeding. Of course we must add to our faith patience. Agriculture is slow, but if you stick to it, the result is sure.

"We need smaller farms." Perhaps so, but I am not sure on that point. It must be confessed, however, that as a general rule small farms are best cultivated. More labor is expended on a given area, and it is a more intelligent labor. On a large farm, as a general rule, either little labor is employed, or it is not efficient from want of proper supervision. The tendency, however, is to larger farms, and to the employment of more machinery. This will necessitate a more intelligent class of farm laborers, and also a more intelligent class of farmers.

But I cannot stop to talk much now. The weather is charming and everything presses. I often think of a story John Johnston once told me. He had some fat cattle to sell. A butcher called to look at them. Mr. J. was plowing in the summer fallow. The day was intensely hot and the butcher was warmly clad. Mr. J. told him where he could find the cattle. After looking at them, he returned. "What do you ask for them?" Mr. J. named the price. "It is too much. Beef is down in New York, and the West is full of cattle." "I can't stop to talk now," said Mr. J., "so if you have anything to say walk along." The ground was soft and mellow, and the butcher managed to go one bout round the large field. When Mr. J. got back to the road he turned in again and started his horses. "For pity's sake, Johnston, stop," said the butcher, "I'll take 'em." If farmers would serve all their callers in this way, they would soon be rid of them. It is very annoying when you are busy to be stopped by a gossiping acquaintance who merely wants to talk.

You don't believe in summer fallows. Neither do I—unless they are summer fallows. A good summer fallow on heavy land is the best of all preparations for wheat. But it must be thoroughly worked. The object is to clean and mellow the land; if this is not done, there is little use in summer fallowing. Whether it is necessary to plow three or four times as Mr. J. used to do before he got his land so clean and in such high condition, I will not say, but one thing is certain, whatever system is adopted, the land should be worked until it is as clean and mellow as a garden. If this can be done by once plowing, and the repeated use of the cultivator and harrows, all very well. It is cheaper than plowing so often, and now that we have so many good and efficient cultivators, there is no excuse for having foul wheat fields.

I am inclined to think that we can dispense with summer fallows, or rather that we can grow corn and summer fallow the land at the same time. If we planted corn with this idea of cleaning the land, and kept cultivating it until not a weed was left in the field, and then

seeded it down with barley or oats the following spring—mowing the clover one year, and pasturing it the next, I believe it could then be plowed just before sowing the wheat, and would give a good crop, especially with the aid of a little manure.

Drain tiles are absurdly high. They ask me more for them than they did last spring. I have been draining as little as possible for two years, thinking that tiles and labor would be cheaper. Labor is cheaper, but not so tiles. I have plenty of stones on my farm, but if the manufacturers would sell tiles at reasonable rates, say \$10 a thousand for 2-inch pipes, they are far cheaper and better than stones. The ditches can be dug so much narrower, and a man that understands it, with proper draining spades and a long handled scoop for cleaning out the bottom, will dig a ditch in half the time, certainly with less than half the labor required to dig a wide drain. There are few men, however, that can be induced to dig narrow drains. They have more muscles than brains. If a man will dig a wide ditch, say 18 inches at the top and a foot at the bottom, at the same price per rod as a narrow drain, and if the manufacturers still persist in charging such exorbitant rates for tiles, we had better use stones.

Keeping Goats for Milk.

Goats are very common in almost all our larger towns and their suburbs, and are constantly increasing in numbers. The milk sells readily at double the price of cow's milk, and goes fully twice as far in use as such milk as the laboring people can ordinarily buy. Goats will walk on the tops of fences, sheds, walls, etc., and do almost anything except fly and climb a tree. They can not be kept among fruit trees or they will kill them, nor closely stabled, or they will die. They will eat with impunity every thing that they should, and almost every thing they should not, (except paving stones,) from newspapers and old boots to the "wash" on the clothes line. Horace Greeley said some years ago, in a communication to the *Agriculturist* on this subject, that he did not think his goats "would have barked a crowbar, unless very hungry," and such is their reputation generally. This is prefatory to the following letter from "a country village in Maine."

"In December 1864, I purchased a pair of young goats to keep in the barn with my horses, as I had heard that horses would be more healthy if stabled with goats. When the teamster landed the goats in the front yard, every neighbor was on the alert and horribly alarmed, expecting nothing short of the murder or maiming of half their children. Nanny had a kid the last day of April 1865, and has supplied our family with excellent milk ever since; and now, in February, she gives a half pint every morning, which is worth more than a pint of such milk as I buy of the neighbors. And now the lady of the house says she would not take fifty dollars for Nanny if she could not get another. The goat has all the oats and hay she will eat—but she is rejoiced to get brakes, twigs, bark of small trees, acorns, and occasionally a 'chew of tobacco.' She has a small field to range in summer, and I never have to chain or hamper her, as she is not breachy. I have a board with cleats nailed on at the pitching window in the barn, so that the goat can go in and out as she pleases. If cows become sick and unhealthy, don't you think we had better keep goats?"

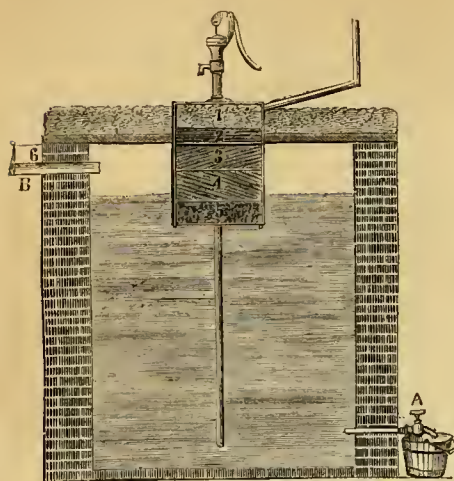


Fig. 1.

About Cisterns.

BY GILBERT J. GREENE, HUDSON, N. Y.

Every good house should have a cistern, indeed a barn can hardly be considered complete without one. A good cistern is a good thing, and a bad one is not much short of a nuisance: How to build a good cistern is a thing worth knowing, and having built one, it is a thing to be proud of. All cistern water should be filtered to take from it whatever impurities may have been gathered from the roofs, pipes, etc.: and how to filter cistern water, or to build cisterns with filters, is the subject of the present article.

Cisterns are usually built under a piazza, or beside the kitchen, sometimes under it, occasionally a portion of the cellar is walled off for a cistern, and if well constructed no special objection can be urged to this plan, further than that it is not always advisable to have such a body of water under the house. Under the piazza or kitchen, or adjoining it, is perhaps the proper place, but whatever the locality, every cistern should be provided with a good substantial filter.

Fig. 1, represents a style of filter in use in many portions of the West, which answers an excellent purpose where the area of roof is not great, as it is not capable of filtering water very fast. It is simply a box about thirty-two inches

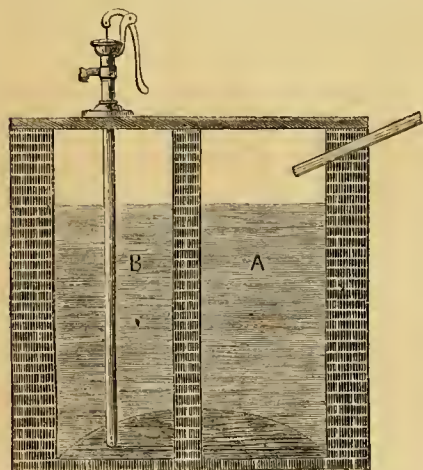


Fig. 2.

in height, and two feet square; the bottom is full of small holes, and this (5) is covered with coarse gravel to the depth of four or five inches; next (4) clean sand, say five inches; then pounded charcoal (3), ten inches, on this (2) another layer of clean sand; and in the top (1), clean, coarse gravel. The water passes from the leader into the top of the box, and in passing

through the strata of sand and charcoal, is freed from all deleterious matter, and the water is fit for any use. The pump is usually placed upon this box and the pipe passes through it into the cistern; such a filter can be attached to almost any cistern already built.

Fig. 2, represents a round or square cistern, built of brick or stone, and well cemented in the sides and bottom; across the middle a wall is built of soft bricks to the height of the cistern; these are laid in cement, but the face of the wall is not cemented. This remark is made to prevent the recurrence of a mistake made by a friend of the writer, who wrote to him some time since to know what kind of a cistern he should build. A cistern similar to fig. 2 was recommended, and soon after he learned that the cistern was completed, that one side was full of water, but the other side was dry. Inquiry was made as to the construction of the partition wall, and it was found that it was all right, was made of selected brick, well laid, and cemented on both sides. Of course nothing could be done but build a new wall, or break a hole through and let the water fill both parts.

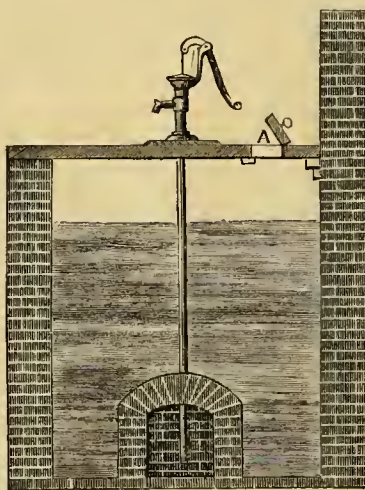


Fig. 3.

Now the philosophy of this filter is this: the water passes from the roof into compartment A, and is filtered through the bricks into compartment B, in which the pump is placed; this wall should be eight inches thick, great care should be taken that the joints are well closed with cement, and no holes left for the passage of water except through the bricks, each alternate layer of which should be laid across the wall. Such a wall, if well constructed, is the best and most reliable filter the writer has seen.

Fig. 3 is a brick filter, easily constructed, and can be readily applied to any cistern now in use: it consists of a sort of box or pen built of brick on the bottom of the cistern, fifteen or twenty inches in diameter, and the same in height, and can be built of one or two thicknesses of brick laid in cement, the top arched and the joints well closed. The lower end of the pump pipe enters this box, and as fast as the water is exhausted in the box it filters in through the bricks. One hundred bricks would make a filter, and almost any one could build it, it is the acme of cheapness, simplicity and durability.

We prefer square cisterns to round ones, because they are in all respects as good, and are more readily constructed. If built adjoining a building, the foundation wall could be used for one side of it. If this be a basement or cellar wall, a faucet could be placed in the cistern as A, in fig. 1. A waste pipe as B, in fig. 1, should be placed in all cisterns, the end of this should

be so arranged with a valve as to close itself, except when water is passing out of it, otherwise mice and insects would get into the cistern, and injure the water. Cisterns outside of buildings should be covered with earth, as in fig. 1, to prevent their freezing, and the covers should be constructed with a trap door (A, fig. 3), so that they can be entered to be cleaned or repaired. If the covering is of plank it should be well jointed, laid in cement upon the walls, and the outside thickly coated with coal tar and sand, and be of durable timber.

Brick filters are not new; the Egyptians used them three thousand years ago. In New Mexico the water from the muddy sluggish streams are filtered in this manner, the natives dig a hole beside the stream, several feet below the surface, this is bricked up, and the water that percolates through the brick is clear and limpid.

Cheap Water Carrier.

Mr. Gainford Ennis, Morgan Co., Ind., sends the following with very clear illustrations, which we try to copy as well as they were drawn:

"I have prepared a description of a cheap *Mechanical appliance*, now in use on our farm, for the benefit of those readers of the *Agriculturist* who have to carry water from the *spring* to the house. I can recommend it to those so situated, or at least, I will say, it has proved itself, in every respect, indispensable, in our case, not only effectually obviating that very laborious task of *carrying water*, but at the same time, has saved incurring the expense of a well, to say nothing of the pleasure of having at command at any moment, a cool and refreshing draught. Take a sufficient number of good posts (fencing posts will do), allowing one for every six feet space. Five inches from the top of each post, mortise in an arm, or bracket, projecting ten inches, with top edge at right angles with the post (see fig. 1). Then set your posts firmly on the line already surveyed for that purpose, allowing space above mentioned, and have the brackets all turned one way, the ends forming a straight line, to receive the track. In setting the posts, there should be maintained a descent of eight degrees at least, to insure sufficient momentum to the bucket, and as *springs* almost universally issue from much lower ground than where buildings



Fig. 1.—POST AND BRACKET.

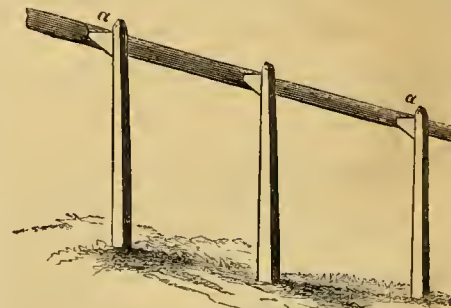


Fig. 2.—INCLINED AND ELEVATED TRACK.

stand, the lack of proper descent is not likely often to prove an impediment. The greater the descent the better. Now procure some boards for track (I use poplar), one inch thick, four inches wide, and twelve feet long; dress the

upper edge slightly rounding; measure and saw them in proper lengths, and nail securely to the ends of the brackets, letting them project two inches above the brackets as shown in fig. 2. The joint which occurs at every alternate bracket,

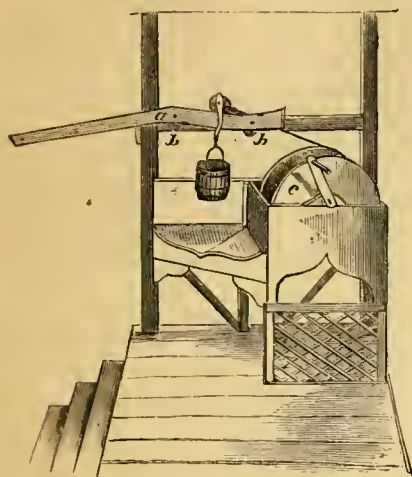


Fig. 3.—WINDLASS, BUCKET-CARRIAGE, ETC.

should be neatly and firmly constructed, with a miter cut at the top, so as to form a lap, to receive a nail to prevent lateral movement, as seen at *a*, *a*.

The first section of the track, commencing at the windlass, should be made from a board of greater width than the others, to admit of cutting a few feet level, to form a rest for the bucket when drawn up; this will be better understood from fig. 3. In this, *a*, represents a portion of the first section of track, cut to a level; *b*, *b*, pulleys for the cord to pass over; *c*, windlass, with wooden crank, which can be constructed either out of boards, or solid wood. It is 18 inches long, by 15 inches in diameter. The windlass should be hung in a substantial frame under the cover of an open porch, or portico, located within a convenient distance from the kitchen.

The other terminus of the track should extend directly over and close down to the spring, fastening in the extreme wall, or to a stake firmly driven for that purpose. The dimensions of the basin should be about $1\frac{1}{2} \times 3$ feet, and of sufficient depth for filling an ordinary bucket.

The construction of the pulley carriage to which the bucket is attached, will be understood by examining fig. 4. The frame (*a*), is made from one piece of wood, with the leader (*b*), attached, which will freely apply itself to any degree of descent; *c*, is a pulley $4\frac{1}{2}$ inches in diameter, turned with a groove half an inch deep, and wide enough to run freely on the track. The opposite portion of the frame (*a*), extends $1\frac{1}{2}$ inches below the edge of the track, forming a guard against the carriage flying off. The cord, *d*, is fastened to the leader (*b*); *e*, is the attachment of bucket to pulley frame. An ordinary well bucket will do. Place the pulley upon the track, with bucket attached; connect the



Fig. 4.
BUCKET CARRIAGE.

cord which should be half-inch manilla, to the windlass. This "Water Carrier" can be constructed by any one who possesses a little of mechanical ingenuity; and the entire cash expenditures connected with its construction should not exceed a very few dollars."

How to Dress Beef on the Prairies.

Every one who has had, like the writer, any experience in doing his family marketing with rifle bullets, knows that a dead beef is a very awkward thing to manage flat on the ground. How far the practice of *long range* marketing is prevalent at the West we do not know, but from a communication received from Daniel Laniman, Macoupin Co., Ill., it seems that Illinoisians are more or less in the habit of shooting their beeves on the prairie, and distant from buildings where they can be hung up. Mr. Laniman takes with him a sort of tripod, which he calls a 'beef-hanger,' constructed as follows: "Take three round poles, strong enough to hold a beef, (or 2×3 scantling will do), about fourteen feet long. Chamfer off the ends of two at the top, so as to allow them to spread at the bottom; place the third piece as a brace between them, and put a strong bolt through the three. There are two strong hooks inserted in the side pieces, as represented in the diagram, and several holes are made so that these may be set higher or lower, according to the size of the beef. This 'hanger' is easily made, simple, cheap, and easily carried to wherever you may chance to shoot your beef."—Its working is

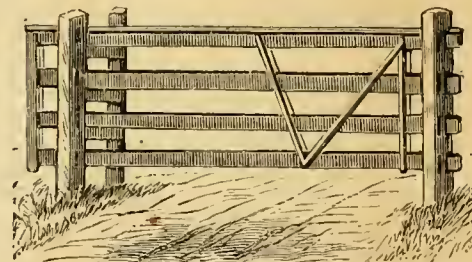


plain, though not described. The steer is shot; his throat cut; the hind legs are cut off below the hocks and skinned down a little way; then the frame is placed over the carcass, only a little elevated, and the hocks are hung on the hooks. Then, as the skinning and dressing progresses, by lifting up on the brace piece the frame is gradually brought nearly into an upright position, and the beef will finally swing clear of the ground. The head, legs and offal are left for the buzzards and crows, while the hide and quarters, nicely dressed, are drawn home.

Convenient Farm Gate.

The following description of a handy farm gate, or substitute for bars, is sent us by Edward Hicks, of North Hempsted, L. I. He writes:—"The accompanying sketch represents a cheap, durable and handy farm gate. It can be as easily opened as one bar can be removed and thrown out of the way. As it cannot sag it needs only ordinary bar posts for support. It is opened by sliding it one-half way back, where it is nearly balanced, then turning it one-half way round. Snow banks interfere less with this gate than with almost any other. To make a dozen gates cheaply, to be used instead of

bars, procure a lot of 10-inch pine boards, sawed into two equal (5-inch) strips for the bars, and one-fourth as many sawed into four equal (2½-inch) strips for braces, uprights, etc. Let the lumber be wet, so that it will not split in driving a wrought nail. Lay the bars on the barn floor, the right distance apart; nail on the up-



FARM GATE.

rights, strips and braces, putting upright strips on each side of the gate, and a narrow strip on the top bar, flat-wise, to give the gate stiffness. It takes about half an hour to make a gate as above described. The gate is shoved back a little in the drawing to show the construction."

Peruvian Maize—Introduction of, etc.

BE HON. E. GEO. SQUIER, NEW YORK CITY.

I have, made some efforts, necessarily in a small way, to introduce into the United States some varieties of what I regard as the finest maize or Indian corn in the world, and which I found growing, in great luxuriance, in the Valley of the Rio Vilcamayo, Urubamba, in Peru, about sixteen miles to the westward of the city of Cuzco, the Capital of the Inca Empire. The river Vilcamayo, which, lower down, takes the name of Ucayali, is the true source of the Amazon. Its valley is narrow throughout, often no more than a mere cañon, shut in on both sides by high and snowy mountains. Nevertheless there are sections where it widens out to the width of from a quarter of a mile to a mile, affording room for cultivation, which is often much extended by an elaborate system of terracing up the hills and mountains to great heights. The particular interval to which I refer, was the country seat or resort of the Incas, outside of their Capital, where they had a palace and extensive "hanging gardens," which are nearly as perfect to-day as when first built.



Fig. 1.



Fig. 2.



Fig. 3.

The place then as now was called Yucay, and was celebrated in the *yaravis* or songs, as the "Seat of Delights."

The mountains shutting in the charming vale of Yucay, are of a disintegrating limestone, and the soil is remarkably fertile and well irrigated through *azequias*, dating from the time of the Incas. The principal article of production in the valley is maize, of which there are three varieties—the white, yellow, and black or purple. The white is the largest in grain and most valued; the yellow is smallest, more compact, and probably harder; while the black is sweetest, and most in demand for fermentation in making *chicha*. I give herewith accurate drawings of average kernels of three kinds.

The *maize blanca*, or white variety, is that

which most impressed me. The ear is rather short and thick, the cob small, the stalk stout and vigorous, with fleshier leaves than our varieties of maize throw out, and the roots start out in rings, two inches or more apart, for a height of from twelve to twenty inches from the top root. It requires therefore a deep soil and to be planted deeply. The natives plant it in rows, in rather deep furrows, and plow between the rows twice in the season. The numbers and grasp of the roots, give the stalk, as I have said, an appearance of vigor and strength, such as I have seen nowhere else. Each stalk sends out from six to eight, and even more ears. The kernels have a thin pellicle, and are exceedingly farinaceous, so sweet and pleasant to the taste as to be rather agreeable food, even when eaten raw, and absolutely delicious when boiled or made into bread. The meal or flour is as white and delicate as that of wheat.

The valley of Yucay is about 10,000 feet above the sea, and produces wheat and barley. The peach and apple grow in it, and the wild black cherry is indigenous. There is no winter, in our sense of the word, but there is the dry, cold season, which pretty much suspends vegetation, and gives the fields the aspect of early December. Regarding these circumstances, I thought it not impossible that this maize, as well as the yellow and black, might be acclimatized in some parts of our own country, and I accordingly brought home some ears, and last spring distributed it, in small quantities, pretty widely. I have not heard the result in all cases. Some planted in rather light soil, rather late in the season, in the ordinary way, in Schenectady County, in this State, grew to the height of fourteen feet, tasselled, but only sent out rudimentary ears, and was much afflicted with the blight. The stalks sent out their root rings for a foot or more above the highest hilling. Some planted in various parts of Westchester County, also rather late, grew vigorously to the height of from fifteen to sixteen feet, developed a few ears, containing, however, but few kernels, and was cut off by the frost. Altogether, the experiments in this latitude were not very satisfactory, leading to the conclusion that our season is not long enough to enable it to ripen. Mr. Solon Robinson, who planted a few grains, says, "it grew immense stalks, without ears," and thinks that "if we could get seed every year it would be very valuable here for fodder." He is of opinion it will not ripen north of Philadelphia, but would succeed in South Carolina. Some planted on Staten Island, sent up stalks to the height of fourteen feet, with air roots three feet above the ground.—The most successful experiment was made by Mr. Bayard Taylor, on his farm not far from Lancaster, Pa., who writes: "My dear Sir,—These are the facts of my experiment with the Peruvian maize.—The grains were planted in small pots about the middle of April, and set in a hot-bed. Three weeks afterward, when the shoots were four or five inches high, they were planted in the open ground. The growth of the canes was rapid and vigorous, and they attained the height of twelve to fifteen feet, before there was any sign of tassel. Even after the tassels came, two or three weeks more elapsed without the indication of a single ear, and it was only in September that eight or ten small ears made their appearance. About the middle of October, seeing that there was no possibility of these ears ripening sufficiently to furnish seed, I pulled them. Three or four showed only two or three scattered grains; the others were tolerably well set, the grains being fully as large as the original

seed. When cooked we found their flavor far beyond that of any maize we had ever tasted,—wonderfully succulent, sweet and delicate.

I was struck with the growth of circles of roots from each joint to the cane, to the height of twelve or eighteen inches from the soil, and it occurred to me, but at too late a period to make any change, that the plants should have been set in trenches, and these new roots covered with earth as fast as they were thrown out.

This is about all I have to communicate. I shall be very glad to try again, because my climate is a little more favorable, I think, than that of New York, and I want to secure seed if possible. The flavor of the corn is so delicious that it would be a pity if we cannot somehow naturalize it." Very truly yours,

BAYARD TAYLOR.

I think the introduction of this maize would be a real boon to the country, and I am sure it could be grown in the Southern States.—It would cost about \$50 to get three or four bushels of this maize over the Andes, and to this port. I propose that fifty gentlemen send a dollar each to the editor of this paper, for this purpose, so that the experiment of introducing this maize may be tried on an adequate scale. I will undertake the correspondence and arrangements to get the seed here. E. G. S.

Have Entozoa any Connection with Rinderpest?—N. Y. Rinderpest Law.

Some interesting observations have lately been published by Doct. Lionel S. Beale, Professor of Physiology, etc., in King's College, London, etc., upon some bodies found in the muscles of animals which have died of the cattle plague. These bodies are very minute, and though their precise nature is not made out, they appear to be entozoa, or parasitic animals in some stage of their existence. We have only room for the briefest abstract of the article. In almost all, if not in all animals dying of cattle plague, these bodies exist in considerable number in the voluntary muscles and in the heart; they are also occasionally found, but in comparatively small numbers in animals apparently in perfect health when killed. In the muscles of a calf killed by cattle plague, under six months of age, these bodies were found in immense numbers. These bodies are found imbedded in the muscular fibre, are usually spindle-shaped, and vary in length from the $\frac{1}{12000}$ th to $\frac{1}{4}$ of an inch. When submitted to a high magnifying power, they are found to be made up of minute granules, less than $\frac{1}{20000}$ th of an inch in their longest diameter, resembling one another in shape, which is oval, flattened and slightly curved, with one extremity blunt and the other almost pointed. While the author does not commit himself to the statement that these bodies are really "worms"—but speaks of them as only worm-like—he evidently thinks that close observation will make them out to be independent organisms. He is equally cautious in attaching any special relation between these and the cattle plague, but suggests that their presence may indicate an unnatural state, caused by a forced nutrition which predisposes the animal to the attacks of disease.

The Law of the State.

AN ACT to prevent the introduction and spread of the disease known as the Rinderpest, and for the protection of the flocks and herds of sheep and cattle in this State from destruction by and other infectious diseases. Passed April 20, 1866; three-fifths being present.

The People of the State of New York, represented in Senate and Assembly do enact as follows:

SECTION 1. It shall be the duty of the health officer of the port of New York, in addition to the duties now imposed on him by existing laws, to examine and inquire whether any animals are brought in any vessels arriving at said port in violation of any regulation of law passed by the Congress of the United States prohibiting the importation of such animals.

SEC. 2. Whenever any animal brought as a ship's cow, with no intention of landing the same or of violating any such law or regulation of Congress as aforesaid, the same shall be carefully examined and kept in quarantine for the space of at least 21 days, and if any symptom of the infection or incubation of the disease commonly known as the rinderpest or any other infectious or contagious disease shall present themselves, it shall be the duty of the said health officer immediately to cause the said animal or animals to be slaughtered, and their remains boxed with a sufficient quantity of quick-lime, sulphate of iron or other disinfectant, and with sufficient weights placed in said box to prevent the same from floating, and to be cast into the water of the harbor or port. It shall be the duty of the said health officer, and of the said commissioners, to cause the said animal and disinfected by suitable agencies the berth or section of the ship in which said animal or animals were lying or slaughtered, and also to cause the clothing and persons of all taking care of the same or engaged in slaughter and burial to be cleansed and disinfected.

SEC. 3. William Kelly, of Dutchess County, Marsena R. Patrick, of Otsego County, and Lewis F. Allen, of Erie County, are hereby appointed, as commissioners under this act, and with powers and duties as hereinafter enumerated.

SEC. 4. In the event of any such disease as the Rinderpest or infectious disease of cattle or sheep breaking out or being suspected to exist in any locality in this State, it shall be the duty of all persons owning or having any interest whatever in the said cattle, immediately to notify the said commissioners or any one of them of the existence of such disease, whereupon the said commissioners shall establish a sanitary cordon around such locality. And thereupon it shall be the duty of the said commissioners to appoint an assistant commissioner for such district with all powers conferred by this act on the said commissioners or their agents or appointees, which said assistant commissioner shall immediately proceed to the place or places where such disease is reported to exist, and cause the said animals to be separated from all connection or proximity with or to all other animals of the ruminant order, and take such other precautionary measures as shall be deemed necessary, and if in his opinion the said disease shall be incurable or threaten to spread to other animals, to cause the same immediately to be slaughtered, and their remains to be deeply buried, and all places in which the said animals have been confined or kept, to be cleansed and disinfected by any of the agencies above mentioned; and also to cause the same to be carefully locked or barred so as to prevent all access to the same by any animals of a like kind for a period of at least one month. Any animal thus slaughtered shall be appraised under the supervision of the said commissioners, and one half of the value of said animal shall be paid by the State to the owner thereof.

SEC. 5. It shall be the duty of the said assistant commissioner, immediately on his being notified of his appointment, or at any time thereafter, of the breaking out of the said disease in any place contiguous to the same and within the county in which he resides, to give public notice of the same in at least one newspaper published in the said county, and to cause notices to be posted up in at least five conspicuous places in said neighborhood, and it shall be his duty to enjoin, in said notice and otherwise, all persons concerned in the care or supervision of neat cattle or sheep not to come within 100 feet of the said locality without the special permission of the said assistant commissioner.

SEC. 6. It shall be the duty of the commissioners appointed under this act, whenever they find that any such disease has made its appearance within the limits of the State to publish in the State paper and in at least one paper published in any county where such disease exists, a statement of the methods approved by the New-York State Agricultural Society for the treatment of cattle affected therewith, and to cause the isolation of the said disease, and the premises or buildings in which said cattle are found affected as aforesaid, and for the prevention of the spread of the same through any agencies of whatever kind.

SEC. 7. The commissioner aforesaid and all such assistants as may be appointed, whenever in their judgment or discretion it shall appear in any case that the disease is not likely to yield to any remedial treatment, or whenever it shall seem that the cost or worth of any such remedial treatment shall be greater than the value of any animal or animals so affected, or whenever in any case such disease shall assume such form of malignity as shall threaten its spread by processes either contagious or hereditary, or otherwise, are hereby empowered to cause the said animals to be slaughtered forthwith and buried, as above provided, and to do all such things as are mentioned in the fourth section of this act.

SEC. 8. The said commissioners or their assistants are hereby empowered to enter upon and take possession of all premises or parts thereof where cattle so affected as aforesaid are found, and to cause the said cattle to be confined in suitable inclosures or buildings for any time requisite in the judgment of the said commissioners or their assistants, and prior to the slaughter and burial of the said animals and the full and complete disinfecting and cleansing of such premises; and all persons whether owners of, or interested in such cattle or otherwise, who shall resist, impede or hinder the said commissioners or their assistants in the execution of their duties under this act, shall be deemed guilty, and on conviction of the same, of a misdemeanor, and shall be punishable with fine not exceeding one thousand dollars, or imprisonment not exceeding the term of six months, or both, in the discretion of the court before which they shall be adjudged guilty as aforesaid.

SEC. 9. The commissioners shall have power to establish all such quarantine or other regulations as they may deem necessary to prevent the spread of the disease or its transit in railroad cars, by vessels or by driving along the public highways; and it shall be proper for the Governor of the State by proclamation as aforesaid, to enjoin all persons concerned or engaged in the traffic or transit of cattle or sheep, not to enter upon any places to take therefrom any such animal or to pass through any such locality, and within such distances from the same as in the said proclamation may be prescribed.

SEC. 10. The sum of \$1,000, or as much thereof as may be necessary, is hereby appropriated to pay to the said commissioners for their services while actually engaged in the duties enjoined upon them in this act, at the rate of \$5 per day to each, and such further sums as may cause them actual expenditures in traveling to and from the places they may be called upon to inspect or visit, and in the printing or publishing of all regulations or notices mentioned in this act. And the further sum of \$15,000, or so much thereof as may be necessary, is hereby appropriated out of any money in the Treasury not otherwise appropriated to pay for animals slaughtered by the provisions of this act, and the Controller is hereby directed to pay for the same on the warrant of the said commissioners.

SEC. 11. The assistant commissioners are to receive for each and every day while actually engaged in duties provided by this act, the sum of \$3 per day, and all actual expenses and disbursements paid or incurred in the discharge of their duties as aforesaid, which said sums shall be a charge upon the county for which he is appointed, and shall when called for be paid by the County Supervisors of the said county, to be paid by the County Treasurer.

SEC. 12. The slaughtering of animals for beef, after having been exposed to the contagion, or supposed to have been so exposed, may be permitted by the commissioners or prohibited by them, as they may judge proper.

SEC. 13. This act shall take effect immediately, and shall continue in force for one year.

Tim Bunker on the Cotton Fever and Emigration Down South.

MR. EDITOR,—Your notice in the May number took me considerable by surprise. The fact is, I have been so awful busy with my own affairs, and Hookertown matters, that I had pretty much forgotten the world outside.—Court business of course I had to attend to. And then I never had so much advice to give in cases out of court, since I have been Justice of Peace. I have pretty much come to the conclusion that I am worth more to keep folks out of lawsuits than to settle cases after they come into court.

You see Hookertown has been in a great stew all winter, about going down South and raising cotton, and betwixt the meetings and the private talks around to the houses, there has not been much else done or thought on. You know our son John went to the war, and a lot more of the Hookertown boys, and they came home full of the matter, and they have kept the pot a boilin' ever since. To hear them talk about the Cotton States you would think there was never such a land lying out a'doors any where.—Canaan want a touch to it.—If it didn't flow with milk and honey, it did with cotton bales, which was enough sight better.—Their heads were completely turned with the tall timber—the smooth rich land—the magnolia blossoms, the cypresses, and the live oaks, and would you believe it—the pretty girls.—Every one of 'em seems to have come home as uneasy as a fish out of water. It is mighty dull work squatting down in the land of steady habits after one has been tearing through the cotton States with Billy Sherman and his troopers. John, for the first few days, said it seemed as if he should suffocate in Hookertown—there was nothing doing, or going to be done.

I talked with the boys in general, and my boy in particular, and argued agin the emigration scheme, and the more I argued the more sot they were in their way of thinking; and that wasn't the worst of it, for they seemed to infect every body with the Southern fever, and one while, I thought they'd carry off Hookertown bodily.—Mrs. Bunker and the grandchildren, and there wouldn't be any body left but Mr. Spooner, myself, and a few other old fogies. As it is, Hookertown has lost some of its best citizens, as well as some others that we could comfortabler spare.

I felt very bad when John stated the case pretty soon after he got home. "Now," says I, "my son, what is the use of your going down to Mississippi, to farm it, when you have got three hundred acres of as handsome land as lies in the Valley of the Connecticut, or as lies out doors anywhere, as to that matter. We old folks have been thinking, when you got back from the wars you would settle down on the old farm, and hand down the Bunker mansion and name to your children. It is kind o' weak in us, but we thought we should have somebody to lean on, when we got a little older. I can't always hold the plow, and mother's eyes will get past fine sewing and clear starching, one of these days."

There was a tear in John's eye as he got a glimpse of the picture we had been looking at during his long absence, and he said:—

"I expect to do jest as you say father. I have always been brought up to mind, and I expect to mind you now. You and mother felt very bad about my going to the war, but on the whole, thought it was best; and when you come to look at this emigration down South on all its sides, you may think it is just about as necessa-

ry for me to go down there now as it was three years ago. I spose I shall feel worse about leaving Hookertown than you will, for you will have the dear old sod under your feet, and all the associations of your lives around you, the old home, the old church, and old friends, while I shall go mostly among strangers. You have taught me not to follow my feelings always, but to do my duty, and the precept and example have struck in pretty deep. Mr. Spooner has preached that way, and I have come to believe it. I didn't join the regiment because I had any appetite for fighting or seeing sights; I thought Hookertown was a part of my country, and the rebs were to be kept out of it. If I didn't go and meet them on Southern soil, they might come up here, and be watering their horses in the Connecticut, which would not be so pleasant. We who went down there to fight have given you a life lease of your peaceful homes, and we feel as if we had a right to go and carve out homes for ourselves, in the land we have won by the sword. The boys talked it all over before they were mustered out, and we mean to go back, unless it is clear that Providence is against the movement.

"You who are on the stage have had your chance, and help'd make Hookertown what it is. You have cultivated and improved your farms, built your houses, and established your schools and churches, and got every thing going in good shape. The land is all occupied, and there isn't room here for more farmers. The farms are too small already. Your population will only grow in the cities and villages."

"But who is going to have my farm when I'm through with it?" I asked.

"Well, father, there is Timothy Bunker Slocum, a smart boy in his first pair of boots, and big enough to ride a horse and go to mill already. Sally thinks she's going to send him to college and make a minister of him, but unless I'm a good deal mistaken the Lord has made a farmer of him from the start, and if Sally undertakes to turn him off of that track, she'll find she's having a sharp fight with the Almighty and give it up. These things run in the blood, and the Bunker's have always stuck to the soil and haven't amounted to much in any other calling. Little Tim takes to a horse as naturally as a young Arab, and his voice has just the right coop for driving oxen. He is your own flesh and blood, and you ought not to feel very bad if a grandson takes care of the Bunker mansion when you have done with it.

"As I was saying, you have had your chance to make a home and build up society here. We want to take our chance down South where there is plenty of room. The South wants people, New England people, and brains especially, more than anything else. It is almost a wilderness, with only a few little clearings and scratches upon its surface. Its worn out and abandoned fields are only worn out upon the surface. The riches of the soil are hardly touched yet. The forests are magnificent, and the climate probably quite as healthful as the Valley of the Connecticut, when it was first settled. It seems a pity that it should lie waste any longer. We want to start a new Hookertown down there, and are willing to take our chances of soil and climate. What is the use of conquering Canaan unless the people go over Jordan and possess the land?"

John said this, and a good deal more in the same vein, and, as Mr. Spooner would say, there was in it a considerable food for reflection. The more I argued the warmer he grew. It

was just like trying to put out a volcano with a squirt gun. "Ah," said Mrs. Bunker, with a sigh after John had gone out, "He isn't a boy any longer, Timothy. It is of no use talking. The fire burns in him, and who knows but the Lord has kindled it."

I couldn't answer that. It was pretty clear that fire was there, and burning strong, and it seems to be spreading all through this region. It is a big subject, and of a good deal of importance to your readers, and with your permission I shall have to load and fire agin on it.

Hookertown,
April 13th, 1866.

Yours to command,
TIMOTHY BUNKER, Esq.

Sweet Herb Culture.

BY PETER HENDERSON, JERSEY CITY.

The cultivation of Sweet Herbs for market purposes, is but little known in this country, except in the vegetable gardens in the vicinity of New York; there it is practised to an extent of perhaps 60 or 70 acres, a fair average product of which would be about \$500 per acre. Like the crops of celery, spinach, or horseradish, it is grown only as a second crop, that is, it is planted in July, after an early crop of peas, cabbages, beets, or onions, has been sold off. The varieties used are Thyme, Sage, Summer Savory, and Sweet Marjoram, the former two being grown in the ratio of ten acres to one of the latter. The seed is sown in April in rich mellow soil, carefully kept clean from weeds until the plants are fit to plant out, which may be done any time that the ground is ready from middle of June until end of July. As the plants are usually small and delicate, it is necessary that the ground be well fined down by harrowing and raking before planting. The distance apart for all the varieties is about the same, namely, 12 inches between the rows, and 8 or 10 inches between the plants; the lines are marked out by what is termed a "marker," which is simply a mammoth wooden rake, with the teeth 12 inches from centres, and having 6 or 8 teeth, this number of lines is marked at once. (This "marker" is used for many other purposes; in the lining out the rows of early cabbages, for instance, every alternate line is planted, thus leaving them 2 feet apart, their proper distance.) In 8 or 10 days after the herb crop has been planted, the ground is "hoed" lightly over by a steel rake, which disturbs the surface sufficiently to destroy the crop of weeds that are just beginning to germinate; it is done in one-third of the time that it could be done by a hoe, and answers the purpose quite as well, as deep hoeing at this early stage of planting is perfectly useless. In 10 or 12 days more, the same operation is repeated with the steel rake, which usually effectually destroys all weeds the seeds of which are near enough to the surface to germinate. We use the steel rake in lieu of a hoe on all our crops immediately after planting, for, as before said, deep hoeing on plants of any kind *when newly planted*, is quite unnecessary, and by the steady application of the rake, weeds are easily kept down, and it is great economy of labor *never to allow them to get established*. The herb crop usually covers the ground completely by the middle of September. Then, every alternate line is cut out, each plant making about 2 "bunches." The object in cutting out the lines alternately is, to give room for the remaining lines to grow; in this way nearly double the weight of crop is taken off the ground than if every line had been cut, and it frequently happens, on particularly rich soils, that at a second cutting every alternate line is

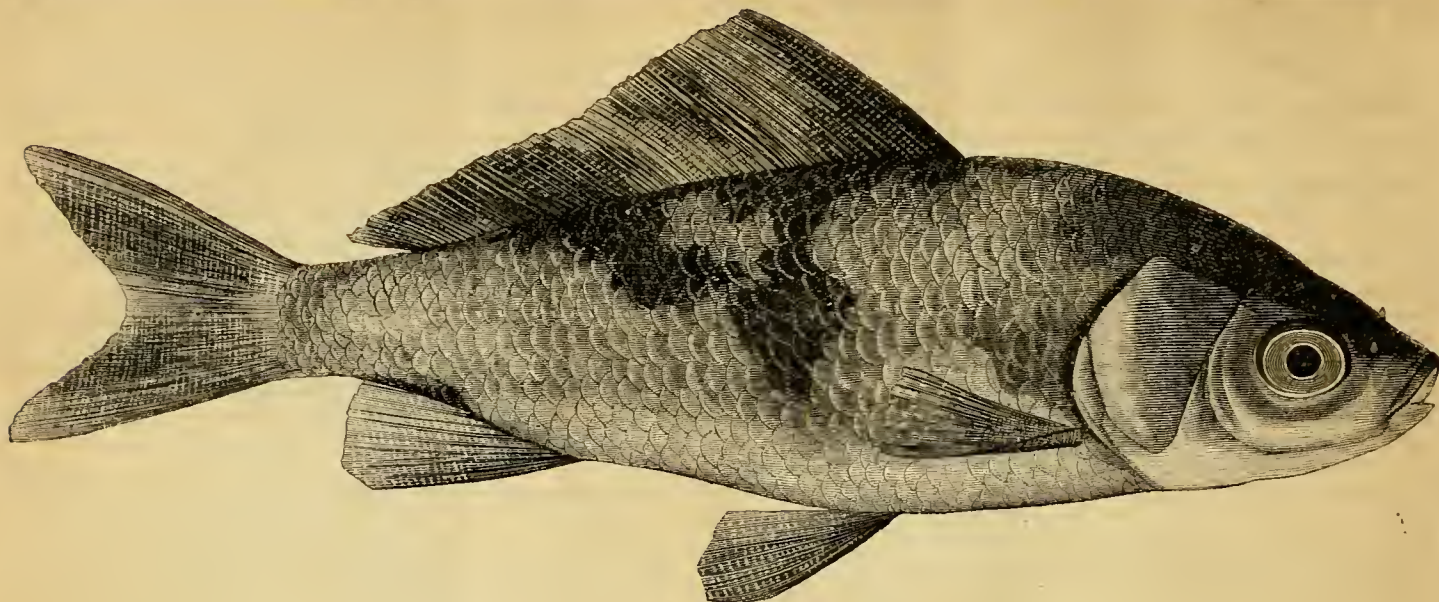


Fig. 1.—THE GOLDEN CARP, OR GOLD-FISH—NATURAL SIZE.

again taken, when the remaining lines now standing 4 feet apart will again meet. I had about an acre of Thyme treated by this process, in the fall of 1864, that sold for over \$2000,—but this was an exceptional case, the crop was unusually fine, and prices at that time were nearly double the usual. As before stated, the average yield is about \$500 per acre. Herbs are always a safe crop for the market gardener, they are less perishable than any thing else grown, as if there be any interruption to their sale in a green state, they can be dried and boxed up and sold in the dry state, months after, if necessary. The usual price is from \$10 to \$15 per 1000 bunches, and we always prefer to dry them rather than sell lower than \$10 per 1000, experience telling us that the market will usually so regulate itself as to handsomely pay for holding back the sale. The cost of getting the crop raised and marketed will average about \$150 per acre, the principle expense being in tying it in bunches. But with many of our industrious German gardeners it does not cost half that, as tying up is usually done by their wives or children in the evenings; a pleasant as well as profitable occupation.

The Golden Carp, or Gold-fish. (*Cyprinus auratus*.)

There are few fish which may be properly classed among the domestic animals of this country, but the Gold-fish is unquestionably one. True, it escapes from confinement and regains its wild habits, but it is universally known in a condition of entire domestication as the denizen of fountains, fresh water pools, and fish ponds,

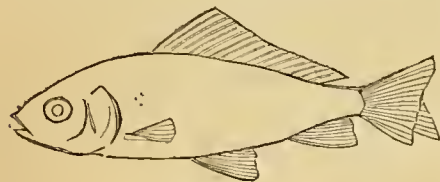


Fig. 2.

and of the globes and aquariums which ornament our dwellings. In the globes we see usually only the golden fish, with those spotted more or less with dark blotches and white, but in the ponds where they breed, almost all tints of silver, bronze, and purple, are seen, besides the orange and golden colors which give the fish its

name and value. These colors are more or less dependent upon age, while the size of the fish at any particular age bears more direct relation to the quantity and quality of their food.

These beautiful fish are natives of China, where they are very common in domestication, but they will live and thrive in the fresh waters of every temperate latitude. They bear the heat of our summer and the cold of winter perfectly well, being often frozen into the solid masses of ice which fill the shallow basins where they are kept, but we presume this is detrimental to them.



Fig. 3.

They do not object to clear limpid water, but seem to prefer that which is roiled and muddy, filled with infusorial plants and animals upon which they feed. In such waters they multiply rapidly, breeding twice, or several times, in the season. The young, hatched from eggs laid among the grass and weeds along the warm edges of the ponds, are at first of a dark bronze color, inclining to olive, and do not gain their true colors till they attain considerable maturity. From their conspicuousness they are a prey to ravenous fish, and their rapid increase is checked, but they are themselves perfectly harmless.

The Gold-fish belongs to the genus *Cyprinus*, to which also the Carp of Europe, *C. carpio* belongs. The flesh of the Gold-fish is edible, but not very good, yet the dark kinds are frequently eaten by persons unsuspecting that they are eating Gold-fish. The size which these fish attain, if they have food enough, is about that of the specimen so well represented in fig. 1, though this is not unusually large. If, however, they are kept on short commons, as in globes where they are seldom fed, they will remain an inch and a half or two inches in length for a long time. Domestication seems to disturb the balance of nature not only in color, but in shape. Fish with two or three tails, or with split or double fins are common, and so also are those deformed by the loss of important fins, as in outlines shown in figures 2 and 3.

There is at all times a ready market for Gold-

fish in the cities, the price varying with the supply and demand. A few few years since they sold at \$3, or \$4 to \$8 per hundred, and retailed at 10c. to 15c. each; at present, however, the price is higher and they sell for \$15 to \$20 per hundred, or from 25c. to 75c. a piece, the cost being regulated by the perfection of the fish in health, coloring, size, etc. The smaller sizes being the favorites. No fish is more easily bred; any pond which does not go dry, if a pair are introduced, will swarm with them after a few years. They are easily transported in winter, simply in water changed once in a few days, and in summer, in water kept cold with ice.

In China they are said to grow to be a foot or more in length, and to live 50 years. They were probably first brought to Europe by the Portuguese, and after their introduction as a great curiosity into the ornamental waters at Versailles, near Paris, which was about 1700, they became before long common all over Europe.

The ease with which they may be tamed adds greatly to the interest of keeping them. The fish soon learn to come to a call, or to the sound of a bell, or to blows upon the water, and will eat from the hand, allow themselves to be taken out of water, etc. We need hardly suggest to our readers a practicable application of the facts we have stated. Notwithstanding they are so common, the demand for them falls far short of the supply. Many a pond might be made to yield a very pretty income in the course of a few years, provided only the present fashion of fish globes continues, as it is likely to. Small gold fish may be secured by catching the young fry and confining them a year or less in contracted basins or boxes, where they will have plenty of fresh water, but little or nothing to eat, except what they find in the clear water. Many will become golden; many will not; but we believe the proportion of golden ones might be greatly increased were the golden fish only allowed to breed. The present scarcity and high price, is, we presume, in a good measure, due to the fact that the gold, silver, and bronze fish, are allowed to breed together indiscriminately. Besides, those who take the fish for market, often most heedlessly throw out the dark colored ones, old and young, to die on the shore; not regarding the fact that a great many, if not all, of the gold fish do not gain their color until they are fully a year old.

The Buffalo Berry.—(*Shepherdia argentea*.)

When the blackberry was first introduced as a cultivated fruit, one of our horticultural writers remarked that probably there were others of our wild fruit-bearing shrubs that would soon be included in the garden, and as one of these he mentioned the Buffalo Berry as promising to reward the attention of the cultivator. We are not aware of any attempts to cultivate the shrub for the economical value of its fruit, though it is grown here and there in collections, on account of the ornamental appearance it presents when its berries are ripe. The Buffalo berry is found on the banks of the upper Missouri, the Saskatchewan, and other large rivers of the Northwest, where it forms a low tree, with its smaller branches ending in stout spines. A small branch of the natural size is given in the engraving. The leaves have a silvery hue, and are found, when closely examined, to be covered with scurf-like scales. The flowers are small, without petals, yellowish and inconspicuous, with the staminate and pistillate ones on separate plants. The berries are about the size of small currants, of a fine scarlet color, and produced in such abundance as to give the trees, late in summer, or early in autumn, a showy appearance. The fruit is of a pleasant acid, and is highly valued for preserves, being esteemed, by those who are acquainted with it, as preferable to currants. The shrub was first described by Nuttall, who named it in honor of Mr. Shepherd, a former curator of the Liverpool Botanical Garden; the specific name, *argentea*, refers to the silvery character of the leaves. The Canadian French used the berries to give a relish to their dried meat, and called them by the rather fanciful name of "Buffalo-fat," whence we get the name Buffalo-berry; it is also called Rabbit-berry in some parts of the country.

Nuttall long ago called attention to this as a plant likely to prove serviceable for hedges. It is perfectly hardy, bears cutting well, is of sufficiently rapid growth, and holds its leaves well in autumn. A tree near Boston is said to have reached the height of fifteen feet in eight years from the seed. The plants are sold at the nurseries for 50 cts. each. In order to obtain fruit it is necessary to set out both staminate and pistillate kinds. It is propagated by sowing seeds, and from suckers. We hope to see this native shrub more common than it now is.

Mildew and its Treatment.

Despite the assertions that we know nothing about the cause of mildew—we know very little about the cause of anything—there are some facts in its history that are well established. It is just as well established that mildew is a plant that lives upon the tissues of other plants—microscopic in size, but nevertheless a plant and capable of reproducing its kind—as it is that an oak or a vine is a plant. There is one point, however, not so well fixed, and that is whether mildew ever appears on a healthy plant, but is not an indication of, rather than a cause of disease. Without committing ourselves to either

side of the case, we may say that the weight of evidence seems to point toward the view that some predisposing cause, some sudden debility in the plant, prepares it for the attacks of the minute parasite, which a perfectly healthy plant is able to repel. The discussion of this point is not our present object. We wish to call attention to the remedy, which general experience has shown to be serviceable in checking the ravages of mildew. The trouble is not confined to



BUFFALO BERRY.—(*Shepherdia argentea*.)

the grape alone, but many other plants suffer in this way. Last year the celery crop both in this country and in Europe, was severely injured by mildew. It is not likely that the minute fungus is the same on plants so different as the grape and the celery, etc., but they are similar in character and the same treatment is found efficacious. The remedy is sulphur, and when properly and promptly applied, it, (even in the great mildew year of 1865,) checks the progress of the destroyer. In July last we gave a figure of a bellows for applying sulphur; a very convenient apparatus, and one which should be kept by the horticultural warehouses. Last year this bellows was difficult to procure, and many were the complaints of those who lost their grapes for the lack of it. All that is needed is a contrivance that will throw sulphur dust, and other expedients may be made use of, or a com-

mon bellows may be modified so as to serve. The vines should be dusted on both surfaces of the leaves on the very first appearance of the pest, and we call attention to the matter thus early that all may be prepared with proper arms and ammunition before the enemy appears.

A writer in the English Journal of Horticulture, recommends the use of sulphur in the form of Sulphide of Calcium. This is not new, but it has long been in use in this country. We give his directions for preparing it: "One pound of quick lime and one pound of flowers of sulphur are well mixed together in one gallon of water, boiled about half an hour, and stirred at intervals while boiling. When it is quite cold, the clear liquid is poured into bottles, and in this state kept for use. About a quarter of a pint of the liquid to four gallons of water, and stirred until the whole becomes of a pale yellow, I have generally found sufficiently strong for use, but half as strong again will do no harm." This preparation is used on vines by means of a syringe, and is found efficacious in destroying both mildew and red spider. Another method is to take twice as much lime as sulphur, put them together in a barrel and slake the lime with hot water. After the mixture is cool, add water, in the proportion of twelve gallons to each pound of sulphur employed. This is less trouble, but it does not ensure so complete a solution of the sulphur as in the process given above. Much of the efficiency of either dry sulphur or the solution, depends upon faithfully applying it upon the very first appearance of the mildew, and arresting its progress before any material damage is done.

The Garden uses of Ivy.

By Ivy, of course we mean true Ivy—*Hedera helix*—which in its different varieties is known as English, Scotch, Irish, and several other Ivies; and none of the native plants that are popularly so called. The different kinds of Ivy present great diversity in the size and shape of the leaf, and there are some in which the dark green is beautifully marked with white and yellow. It endures almost every treatment, except exposure to a burning sun, and though it is not as a climber very suitable where the winter is much more severe than that of New York City, it can in much colder places be grown low and made to serve a useful purpose. Wherever it will flourish there is nothing more beautiful as a climber to cover stone or brick buildings than Ivy; it makes a dense sheet of evergreen foliage that no other plant can equal, and it clings by means of its abundant rootlets with a tenacity that is remarkable. Growing upon buildings, stone walls, and the like, it serves an excellent purpose, but there are other uses to which it can be put, and though every one may not have a stone house, or live in a suitable climate, yet all can have plenty of Ivy. When grown prostrate upon the ground, it forms a dense mat of dark verdure, and is useful to clothe shady spots where grass will not flourish. Grown in this way nothing can be more beautiful in cemetery decorations, and a grave may be covered by it with a mantle that is always green. Trained along the margins of borders it makes a most

useful edging, and deserves more attention in this respect than it has yet received in this country. No plant is so valuable as the Ivy for indoor green, and it has the great advantage that it grows well in the shade, and will endure neglect, and the extremes that the temperature of our dwellings often present. For hanging baskets, vases, and all such uses, it is always in requisition, and it is often grown in pots and trained around pictures, over doors, windows, etc. There is one house which we frequently pass, which has a complete window screen of Ivy, which is so fresh and beautiful that we always stop to pay it the homage of our admiration. We said that the plant would endure neglect, but it well re-

pays attention and an occasional washing of the foliage is labor well bestowed. Now is the time to prepare for these indoor decorations by starting the plants; and nothing is easier. We have raised fair plants in one season from a single joint, but it is better to use cuttings a foot or so long. Put in good soil in a shady place, they will seldom fail to take root and make plants. Where the plants are intended for indoor uses, they should be trained up to stakes, as if allowed to lie upon the ground they will root at every joint, and will also be quite one-sided when they are potted in autumn. Those who have Ivy in pots, etc., indoors, should put them in a shady place and give them sufficient water. It is well to repot in rich soil in order to get a good growth during the summer, and if the plants are grown upon frames to give a little care now and then to pruning and training.



Fig. 1.

Fig. 2.

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Notes on Grapes and Grape Culture.

Perhaps no plant has been made to assume so many shapes as the vine, and whoever looks over the various European and American works on vine culture cannot but be astonished at the number of plans that have been described. All rational training of the vine has the same object in view: the production of the greatest quantity of the best fruit in the smallest space. In striving to attain this end, it is not surprising that different persons hit upon the same plan, and it has happened several times that our correspondents have sent us an account of their methods of training, which were simply repetitions of old ones. A method has recently been described by F. M. J., Augusta, Iowa, which is almost precisely one that has been for a long time in use in France, but as it is one which we believe we have not given, we illustrate it. It is no doubt original with Mr. J., but he will find the same thing in principle, though differing in unimportant details, in Guyot and other French writers on vine culture. Mr. J. says: "I send you what I consider an improvement on the

stake and bow system, from the fact that the bearing canes are secured to the wire, as shown in the sketch, affording a better opportunity for sun and free circulation of air, as well as for pinching the laterals. The two canes grown

this year, fig. 2, are trained to stakes. In November these will be pruned to 4 feet in length, and the next year fastened to the wire, as in fig. 1. The next summer two more canes will be grown to the stakes, to replace the canes that have fruited, and which will be cut away at the next pruning. To make a support of this kind, set at each end of the row a good sized fence post, to which fasten No. 10 or 12 galvanized wire, at about 18 inches from the ground. Split or sawed stakes, 6 feet long and 2 inches square, are set at each vine, and a saw scarf is made at 18 or 20 inches from the ground, to receive the wire. [Better use staples.—Ed.] A good distance for rampant growing vines is 6 feet apart, in rows 8 feet apart. This plan has the advantage of bringing the fruit near the ground, which is especially desirable in cold localities."

The author of *My Vineyard at Lakeview* has another modification of this mode of training. His vines are supplied with strong stakes, and are placed 6 feet apart. Two canes are grown each year to bear fruit the next. Finding that four canes to a stake made a crowded mass of foliage and rendered pruning difficult, he took strips of larch board, 9½ feet long, and nailed them from near the bottom of one stake to the top of the next. Upon these diagonal slats are trained the canes for next year's fruit, while those in bearing are kept upon the stakes. The

explanation unnecessary. While the author does not think it the best method for large vineyards, he finds it very satisfactory in plantations of moderate size and in garden culture.

Mr. C. G. Green, Hudson, N. Y., communicates a method practised by Messrs. J. F. Crank & Co., Penn Yan, N. Y., in layering the Delaware, which is slow to root with the ordinary treatment. They lay a cane down in a trench 6 inches deep, and fasten it there by pegs. The cane is kept in this position until the shoots have made a growth of three or four inches, when it is taken up, and the bark cut from the lower side of the cane for its whole length. It is then replaced in the trench and covered with one or two inches of earth, and as the young growth increases in height, more earth is gradually added. Roots readily push from the portion deprived of its bark, and in autumn he gets as many well rooted plants as there were buds upon the cane. The only thing peculiar to the process of Messrs. C. seems to be the removal of the bark; the treatment of the layer in other respects will be found described, and illustrated on page 61 of *Fuller's Grape Culturist*.

In England a ground vinery has been for a few years past quite popular among fruit growers. It is there used for growing the European grape, and will doubtless become more or less used by us. It is simply a low cold-frame placed over the vine, which is trained close to the ground. So much are these in demand in England, that we find them advertised by several makers as regular articles of trade. We

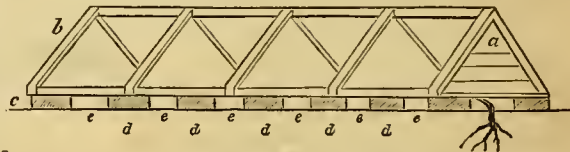


Fig. 4.—GROUND VINERY.

give a figure of one from Rivers' *Miniature Fruit Garden*. It consists of two sashes put together like a roof. The usual length is 7 feet, width of base 30 inches, slope of roof 20 inches, depth in center 16 inches. These are the dimensions for a single vine, but for two vines they are made larger. By placing frames end to end, the length of the vinery may be increased as required. The ends are closed, an aperture being arranged at *a*, which may be opened for the escape of hot air. The frame is set upon bricks, (*d, d*), laid a few inches apart, leaving spaces (*c, c*) for ventilation. The ground within is covered with slates or tiles, and the vine, planted at one end, is laid directly on the slates and is fastened there by pegs. The fruit ripens laying upon the slates, and the Black Hamburg, etc., are said to attain perfection when grown in this way. How far our intense suns will require a modification of this method, by raising the vines above the slates, giving more care to the ventilation, etc., practice can only determine. While in England the vines need no protection during the winter, with us they would need to be covered with great care,



Fig. 3.—TRAINING BY THE AUTHOR OF "MY VINEYARD."

result is, the fruit ripens better, and the new wood has a better chance to develop and mature, while the operation of summer pruning is greatly facilitated. The cut, fig. 3, taken from the work above mentioned, will render other

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A House for Drying Fruit.

BY W. W. SEWALL, VERDEN, ILL.

However superior canned or preserved fruit may be, there is always a large demand for the dried article, and when well prepared, it meets with a ready sale. The more rapidly the fruit is dried, and the more it is excluded from light and flies, the better it will be, and there are several contrivances for accomplishing this end. Some of the fruit drying arrangements are patented, while others, perhaps equally effective, may be made by any one. We give drawings and description of a fruit drying house furnished us by Mr. W. W. Sewall, of Verden, Ill., who says it is both economical and satisfactory. "The house, fig. 1, is eight feet six inches long, by four feet two inches wide, outside measurement, and seven feet high to the eaves. There is no frame except the sills and plates, which are 2x4 scantling, to which the boards on the sides are nailed; and the cracks are battened as shown in the engraving. The roof is shingles or boards, and it would be much better if it projected some feet over the sides and front end, to afford protection to those preparing the fruit.

"The ends of the house are enclosed by a series of doors, marked A in fig. 1. Each of these doors moves independently of the others, and is hung by means of pivots near its upper edge, which pivots drop into sockets like that shown in fig. 2. Each door may be readily lifted from its place, by lifting the pivots from the sockets. Both ends of the house are exactly alike. The fruit is spread upon shallow drawers, which are four feet square and 1½ inches deep; fig. 3. The sides and bottom are of common laths; placing the laths that form the bottom just close enough to prevent the fruit from falling through. The ends of the bottom pieces project half an inch beyond the sides, to rest on slats nailed to the walls of the house, and the bottom of the drawer is strengthened by having a lath nailed across it, as shown in fig. 3. To support the drawers, laths are nailed to the sides of the house, two inches apart from center to center; the drawers rest upon these by means of their projecting ends. A set of these drawers is introduced at each end of the house, and they rest very close together, as seen at B, fig. 1.—The house is set on a brick foundation, level with the ground, of which a plan is given in fig. 4. The furnace (A) is sunk two feet deep; it is covered with heavy sheet iron, which to better regulate the heat, may have a covering of sand. The pipe (B) is six or eight inches in diameter, carefully riveted at the joints to prevent the escape of smoke, except at C, C, where the joints are put together in the usual manner, so as to allow the pipe to be taken apart and removed to a dry place when not in use.

The chimney (D) is made high enough to insure a good draft. The covering of the furnace is ten or twelve inches below the top of the wall, and the pipe rises gradually until it reaches the chimney, in order to increase the draft and bring

the apex of the roof. The ventilator consists of two boards nailed together and placed over an opening four inches wide, which runs the whole length of the roof; it may be raised or lowered to decrease or increase the temperature.

The drawers should be made all alike, to fit in any part of the house, so that they may be moved up as the fruit in them becomes dry, and others containing green fruit be placed near the fire. As the fruit dries, the contents of several drawers may be thrown together. By arranging one side of the cellar to receive the drawers, they may be made very useful in storing away green fruit for the winter; for this purpose the slats to support them should be placed far enough apart to accommodate the different sizes of fruit. Fruit thus stored keeps well, and this use alone pays for the cost of the drawers. This dry house demands a machine to halve peaches rapidly, and it is hoped that Yankee ingenuity will soon supply one."

—We would suggest that a house of this kind would be more satisfactory, if the foundation were built higher with air holes made to admit cold air below the pipe, and thus keep up a constant flow of dry air through the house, and dry the fruit all the more rapidly.

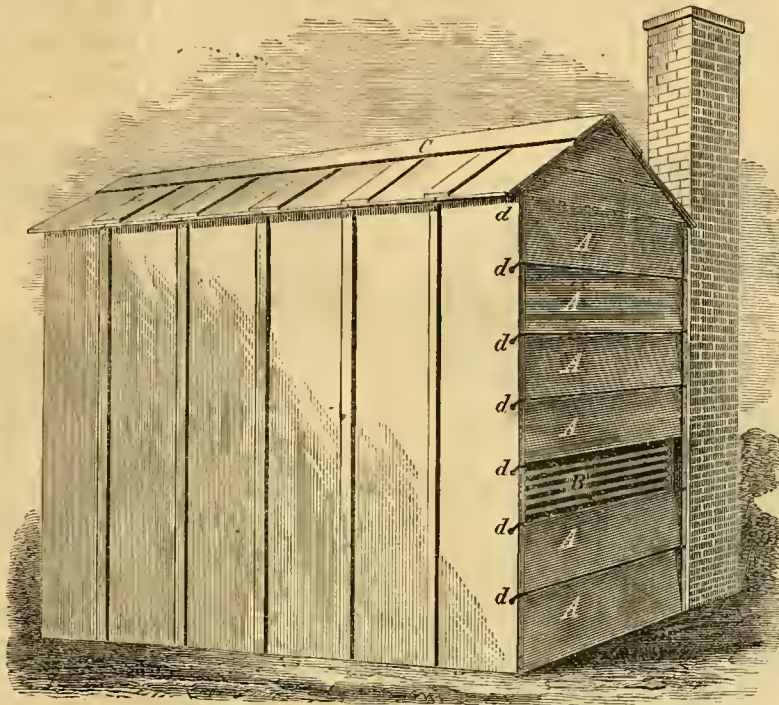


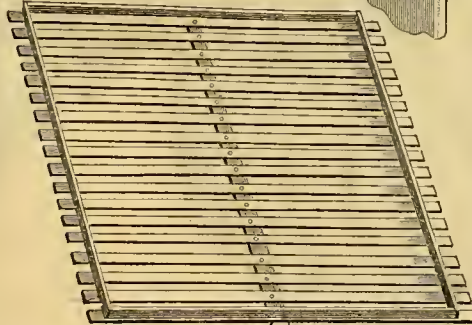
Fig. 1.—FRUIT DRYING HOUSE.

the cooler portion of the pipe nearer the fruit. It may be necessary to regulate the heat by covering the joints of the pipe that are nearest

FIG. 2



FIG. 3



Figs. 2 and 3.

to the chimney with a strip of sheet iron. A pit (E) is in front of the furnace to admit of firing, and should be sheltered from the rain.

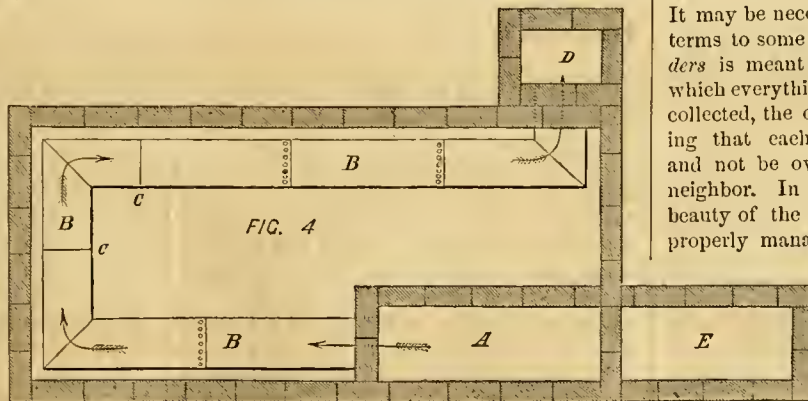


Fig. 4.

The heat rises through the successive layers of fruit and passes off at the ventilator C (fig. 1) at

Old and New Styles in Gardening.

In conversing a few days ago with an old gardener we asked him why he did not go into the propagation of "bedding stuff" for which there is so great a demand. He replied, in substance, that "he would not touch it, an I pander to the present barbaric taste; that there was now no true love for flowers, but that all that was aimed at was to produce effects of color, while all regard for beauty of flowers was lost. That it was a prostitution of flowers to use them for producing an effect of color which could as well be done by the use of cloth or any other material of gay hues."—There is much truth in our friend's view, but in discarding bedding plants altogether and giving up the effects obtained by massing, he runs to extremes as much as do those who go altogether for ribbon work and lawn embroidery and neglect mixed borders. It may be necessary to explain these gardener's terms to some of our readers. By *mixed borders* is meant the old-fashioned flower-bed, in which everything that suits the owner's fancy is collected, the only attempt at arrangement being that each should have a favorable place, and not be overtopped by its taller growing neighbor. In this, flowers are grown for the beauty of the individual specimens, and when properly managed, will give a succession of

flowers from the first peeping of the crocus till the hard frosts put an end to the chrysanthemums. The *ribbon* and other styles require but few kinds of flowers and a great many of each, and they are planted

so that each color will be by itself and contrast with an adjoining mass of some other color,

Where there are long bands of different colors side by side, it is *ribbon planting*; when variously shaped beds are cut in a lawn and each planted with one color, or a few colors, it is *mosaic* or embroidery work, and it is sometimes carried to the refinement of using gravels of different colors to heighten the effect of the flowers. Planting of this kind appears best when looked down upon, or from a point where the character of the individual plants is lost in the general effect. If asked which of the two styles of gardening we prefer, we unhesitatingly choose the mixed border, as it is here that the true lover of flowers is gratified with the best development of each, and has constant enjoyment in the succession of beauties which each day reveals. Still we would not give up planting in masses altogether. Decorative beds in a lawn are always pleasing, and if not indulged in to the exclusion of the proper mixed borders, are to be commended. We do not get much show from the bedding plants until rather late in the season, and whoever depends upon them entirely, is deprived of at least two months of floral enjoyment. Sometimes a mixed bed is planted so as to give a great variety and succession of bloom and yet be effective as a whole. Breck, in his lately published New Book of Flowers, recommends the following disposition: For a large oval bed, sow Mignonette all around 18 inches from the edging; after the plants are through the ground, set all the various colors of Portulacas alternately, one foot apart in the same row. In the second row, 3 feet from the edging, plant all the fine colors of Phlox Drummondii, 8 inches apart. Sow a third row, four feet from the edging, with white Candy-tuft, putting China Pinks 3 inches apart in the same row. Five feet within the edging, plant a row with Purple Globe Amaranths, 8 inches apart, alternating with German Ten Weeks Stocks. The fifth and next row is made up of the finest Double Asters, and the remaining space in the center of the bed is filled with Petunias, with bulbs of French Hybrid Gladiolus set about one foot apart among the Petunias.

THE CENTAUREA CANDIDISSIMA HARDY.—This ornamental leaved plant has usually been treated as tender. Last year we left out three

plants in the worst possible exposure, where a part of the time they were flooded and frozen. This spring, we find, much to our surprise, that one of the plants is alive and is pushing a new growth. We have no doubt that in a favorable situation and with a moderate protection of straw, leaves, or evergreen boughs, this useful decorative plant will winter with safety.



DWARF SNOWBALL.—(*Viburnum plicatum*.)

The Dwarf Snowball.—*Viburnum plicatum*.

We are indebted to China, and the labors of Mr. Fortune for many beautiful plants, most of which, such as the Wiegela, Forsythia, and Dicentra, have become so generally distributed among cultivators that they are well known. But here is a most charming plant, introduced about the same time as the others, that is, in this country at least, still quite rare, for some reason that we do not know. It is not difficult to propagate, is perfectly hardy, and has every quality to render it popular. We give a figure and a notice, which will probably create such a demand for the plant that our nurserymen will see that it can no longer be called rare. The common Snowball, so long cultivated in our gardens is still prized as an ornamental shrub. This species is far more beautiful; it seldom

grows more than six feet in height, and has a very neat habit. Its foliage is very fine, being firm and of a rich dark green. It is marked by such strong veins as to give the leaf something of a plaited appearance, whence the name *plicatum*. The flowers are of the purest white; indeed truly like balls of freshly fallen snow, and of a most agreeable, though not very strong fragrance. The figure shows a flower cluster of

the natural size, but no engraving can represent the purity of the whiteness of the petals. The plant readily grows from layers, and it may doubtless be raised from cuttings. Beauty and fragrance of flower, neatness of foliage, and hardiness and ease of propagation are not often all combined in one plant; so in behalf of the lovers of beautiful shrubs we beg the nurserymen to give us a supply of *Viburnum plicatum*.

Tomato Training.

We have given several plans for training the Tomato, by the use of trellises, surrounding the plant by a frame of sticks and hoops, and the French method of growing to a single stem as given on page 173, last month. The following description is given us by Mr. William Stewart, Oswego, N. Y., of a method of training that we have seen and with good results. "Tomatoes may be trained up to a wall or fence, or any outbuilding having a proper aspect for their ripening, if such positions are not required for other purposes. I trained them dur-

ing last season to fifteen feet in height, on the southern side of the barn, and they had an ornamental appearance and were much admired.

I planted them at about four feet apart, and from time to time selected enough leaders to cover the entire available space, training them at about nine inches apart; the soil was rich and they grew rapidly, produced abundantly, were well flavored and — always clean. In training them, cut or pinch off all weak or useless laterals, bearing in mind to leave enough of those having on a sufficiency of fruit, pinching off all points near the fruit except those required for leaders.

The fruit, when it is beginning to ripen, may be exposed by cutting off such foliage as would be likely to shade it. The training requires to be attended to at least once a week, otherwise they quickly get into a state of disorder, and proper success is not attainable. It is astonish-

ing how a large space of them may be regulated if not too long neglected. The trouble is no more than would be required to support them in any other way. Those who adopt the method will, I am pretty sure, be well satisfied with the result. My way of fastening them has been with staples, which I make quickly out of common wire with a pair of pliers, a hammer, and a stone to sharpen them on."

Mr. S. sends us samples of the staples he uses, which have the points sharpened in the direction of the staple or at right angles to it, according as they are to be driven into boards running horizontally or perpendicularly.

Asparagus, White or Green?

We are asked if asparagus should be blanched to fit it for the table. By no means. It is blanched for the city markets by growing it under a coating of manure, but though it looks delicate and tender when treated in this way, it is tough, bitter, and nearly unfit to eat. City people, who do not know any better, will select white asparagus in preference to green, just for the looks, and as long as they are willing to pay for having it spoiled, market gardeners will supply it in this way. Generally, all of the shoot that grows below ground is worthless, and were it not for leaving a portion to decay, there would be no need of cutting below the surface.

Late Blooming Flowers.

By a little management the flower garden may be kept brilliant until frosts put an end to growth and flowering. Nothing among the bedding plants makes a greater show, late in the season, than the Mexican Sage, *Salvia splendens*. Then there are Chrysanthemums in great variety. The Tritoma has spikes of flowers so brilliant that it has in England received the somewhat absurd descriptive name of the "Red-hot-Poker-Plant." There are tuberoses, late unless forced, Ageratums, and others, not forgetting the "foliage plants," Coleus, Iresine (Achyranthes) and others. It is not too late to sow annuals for late blooming, and those who have been obliged to delay sowing them can yet do so and get a very satisfactory bloom. Asters, Zinnias, Helichrysums, (and other everlasting,) if sowed as late as the early part of the present month, will pay for the trouble, and Candytuft, Mignonette, and many others usually sown in spring, may be put in for a fall crop.

Striking Cuttings in Sand.

Noticing that the method of rooting cuttings in wet sand is highly commended in the recent English horticultural journals, we would remind our readers of a communication in the *Agriculturist* two years ago.—In February 1864, Mr. Henderson gave us an article describing the plan, and most of those who have followed it have met with success, while some have failed, probably from not complying with the essential requirement, i. e., to keep the sand constantly wet. It is very convenient for those who wish to multiply bedding plants and make other cuttings during the summer, and we have succeeded in this manner with a number of shrubs, taking the young and rather soft wood. A common saucer or soup plate is filled with sand—any kind will do that is free from salt—add enough water to thoroughly wet the sand and form a kind of mud, and into this insert the cuttings

quite thickly together. The cuttings are made from one to two inches long, and when inserted are not to be shaded but exposed to full sunlight, and, as stated above, the sand to be kept constantly wet. Once dried they seldom recover.

THE HOUSEHOLD.

Deodorizers and Disinfectants.

In conversation some time ago with an officer of one of the gas companies, we asked him why he did not render his gas less disagreeable to the smell. His reply was, that it was a great advantage to the consumer to have the gas thus unpleasant, for were it odorless a leak would not be observed, as it now is at once. As the unpleasant odor of the gas enables us to detect a defect in the pipes, so other odors point out defects in the household and domestic economy, and indicate that something is escaping that ought to be stopped. Whatever may be the cause of certain epidemic diseases, there is one thing that is well established,—they are invited by filth and repelled by cleanliness. Decaying animal and vegetable matters, if they do not cause disease themselves, put the air in a condition to propagate it. Fortunately these processes of decay give us warning, for the most part by the unpleasant odor given off. Cleanliness of the house and its surroundings should at all times be observed, but especially when the warm weather hastens decay of all kinds. Prevention in this case is better than cure, and the removal of all offensive matter from about the dwelling is the first thing to be thought of. An existing smell may be treated in one of three ways; it may be disguised, absorbed, or destroyed. The disguising of smells is not to be commended, though much of the so-called disinfecting is of this character. The sprinkling of perfumes, the burning of pastilles and other substances which give off an odor by the application of heat, only substitute one odor for another, and do nothing towards actually removing the trouble. Absorbents are useful in many cases. One of the most powerful of these is charcoal, but dried peat or muck, or even loamy soil will answer a good purpose. By the use of either of these, privies, piggeries, and heaps where animal matter is being made into manure, can be kept from giving off offensive odors. Among the substances that have been used for destroying odors chemically, are Chlorine, Nitric oxide, Permanganate of Potash, Sulphate of Iron, Nitrate of Lead, Chloride of Zinc, and others, besides several secret or patented compounds. Of these there is but one likely to be employed by the public generally, and that is Chlorine in the form of what is called Chloride of Lime, or Bleaching Powders. It is cheap, easily applied, free from unpleasant after effects, and quite as efficacious as any other. When sprinkled about in offensive places, it destroys unpleasant odors as they are generated, and if a more prompt action is desired, it may be dissolved in water, allowed to settle, and the clear liquid used. There are other ways for applying chlorine more thoroughly, but they are not to be commended for general use. While this and other disinfectants are of great use in producing a wholesome state of the atmosphere, medical men doubt if they possess any considerable efficacy in destroying the poison, or whatever it may be that causes epidemic and contagious diseases after it is once introduced.

For the American Agriculturist.

About the Fashions—Sundry Hints.

FURNISHED BY MADAME DEMOREST.

We cannot congratulate the ladies this season upon their sensible fashions. They are full of bright effects, and pretty colors seen from a distance, but in detail they are exaggerated, and in many respects absurd, as well as inconvenient. The bonnets are ridiculously small, setting high like the crown of a Normandy cap, on top of the head, or laying low, and flat, like an inverted soup plate, tied close at

the sides, but in either case affording no protection from sun, or storm, and leaving the hair exposed to all the dust of the streets and roads. [Very, very true.—Ed.]

The new styles of skirts, on the contrary, particularly at the base, are enormously wide, and tilt at every touch in a way that verges slightly on the indecent.—The fashion of looping up the skirts over the Balmoral petticoats, was a very good one, but the original object has been almost wholly lost sight of, in the desire for display, in the temptation to exhibit elegant cambric flutings, rich embroidery, and a fanciful *chaussure*. A well-dressed foot is a pleasant object to contemplate, and it is indispensable to a lady's good appearance, but the beauty of the shoe and stocking, consists in its perfect fit and fineness, not in color, and showy ornament.

We do not object to the introduction of bright colors, even in street attire, but it requires to be done with great taste and judgment. A mixture of colors is always vulgar, and persons who cannot afford a great variety in their dress, should be careful to select only such colors as will harmonize, and prove lasting and serviceable.

White has been largely introduced into street toilettes of late years, in the shape of white veils, white bonnets, white sacks, and the like. These are all very well for those who possess outside garments, suited to every occasion, but for those limited to one, or at most to a "best," and a "hack," they are entirely unsuited. Nothing looks worse than a white bonnet, or veil, or a light, showy sack, and a dingy dress. A neat suit all of a color, or of a neutral tint, relieved by some bright shade is infinitely preferable.

The great temptation this season is to a vulgar profusion of trimming. In addition to the usual ornaments, a great many new ones have been introduced, such as buttons, chains, strings of beads, cameos, buckles, clasps, and mixtures of straw with jet. In addition to these, not a few milliners pile on lace, ribbon, flowers, veil, until the diminutive bonnet is completely hidden, and its original shape quite lost sight of.

Properly, the bonnets this season require very little trimming. They are very small, and the braids are all of the fancy sort, alternating with bands or puffings of silk. A "*Benoiton*," that is to say, a chain, fastened with cameos, a bandeau, and strings, are all that is required for these.

The *Princesse*, or gored style of dress is more fashionable than any other, but can never be very popular, because it is not easily made, and cannot be made over with the same facility as the ordinary styles. Moreover, it is inconvenient for looping up, and is not graceful for the street. Skirts may be partially gored, however, so as to give much of the effect of a gored dress, with very little trouble and a positive saving in the material, and the breadths of a rich silk may be turned in, and all cutting avoided, by those who wish to obtain the effect, without injury to material.

Dresses for house and evening wear, are worn with immensely long trails. In Paris two yards is considered moderate. These dresses are worn without hoops, almost without sleeves, and with a very short, low corsage, quite in the old Empire style. Looped up dresses are still worn over hoops in the street.

Artificial Memory.

A frequent Contributor to the *American Agriculturist* writes: One of our contemporaries recommends the use of a slate hanging up in the pantry, on which to note down whatever is wanted for daily supplies, or whatever family duties need attending to. One morning, perhaps the entry will be, "Send for soda and saleratus and alspice." "Examine brine in beef-barrel." "Weed the onions." This is for the man's side of the slate. On the woman's side we shall find such things as: "Brown the coffee," "Seal the bread-box," "Finish Mary's apron," etc. Whenever anything occurs to the head of the family that is very important to remember, it is put on the slate, rather than trusted

to the memory. Now, this looks well at first, and it may answer for old people, whose memories are failing, but it is a bad practice for the young, and those in active life. It *weakens* the memory. With the faculties of the mind, or with the organs of the body, whatever we wish to strengthen, we must *exercise*. If an able-bodied man should use crutches, or carry his right arm in a sling, he would soon cease to be able-bodied. So with the memory, or reason, or imagination. By no means employ an artificial memory, be it slate, piece of paper, or tablet, but write everything on the tablet of your mind clearly and distinctly, and learn to hold it there firmly, and then to recall it when needed. It will make one more self-reliant and strong every way. We speak from an experience of the injury of trusting to an artificial memory, and would caution others against it.

"Information Wanted."

Under this head we throw together sundry queries taken as we find them in a bundle of letters in the "Housekeeping Drawer." The questions are "open to the meeting" for discussions and replies. Please let answers refer to the numbers:

- 1—Best kind of salt for butter?
- 2—How much salt to a pound of butter?
- 3—How to color kid gloves?
- 4—Patterns (sketches) for making cone frames?
- 5—How best to get rid of flies?
- 6—A cement for fastening knives in handles?
- 7—Best pork brine?
- 8—Best mode of hulling corn?
- 9—A good home-made ink?
- 10—To extract wheel-grease from unwashable garments?
- 11—Best home-made binding for copies of this paper?
- 12—To preserve bacon from flies in summer?
- 13—Labor-saving soap that will not cause garments to fade or rot?
- 14—To restore faded Buffalo robes?
- 15—To remove mildew from muslin?
- 16—To color cotton and flax warp green for carpets?
- 17—Best economical icing for cakes?
- 18—Is scalded brine as good as fresh?
- 19—Best mode of pickling martynias?
- 20—To make a good home-made toilet soap?
- 21—Best mode of bottling and barreling pickles?
- 22—How to make the "Free and Easy Soap"?
- 23—Best way of making salsify soup?
- 24—Best proportion of lard and rosin for protecting metals?
- 25—To keep sad-irons smooth, and free from rust?
- 26—When to cut wood for rustic work, so as to have it retain the bark most firmly?
- 27—Best mode of cooking egg plant?
- 28—Best mode of boiling potatoes?

"Salt Rising" Bread.

[We have never quite got over the liking for the old fashioned "salt rising bread" so common in our boyhood days, at the West, before the times of brewers and brewer's yeast. The writer of the following gives the *modus operandi* very clearly.—Ed.]

I saw in a recent number of the *American Agriculturist* a request for a process of making bread when yeast cannot be obtained. There seems to be a prevailing idea that bread cannot be made without "Hop yeast."—I have been a housekeeper for over twenty years, and for the most of the time have made my bread after the following process. My neighbors also use the same, and we pride ourselves on being good bread makers.—Take a pint bowl about one-third full of quite warm water, put in a bit of soda as large as half a pea and a small pinch of salt; thicken the water with flour until as stiff as batter for pancakes, then set the bowl in a vessel of very warm water and place it where it will keep about the same temperature, taking care not to scald, as that will spoil it. In from five to seven hours this will ferment; let it rise until the bowl is nearly full, then warm about three pints of

milk (water will do very well, but the bread will not be as white and tender), stir in flour enough to make a stiff batter, and add the above yeast, mixing it all thoroughly together, and set where it will keep quite warm. In about an hour it will be light enough to mould into loaves by adding more flour. The above quantity will make three good sized loaves. Mould, and put in tins, and set them again where they will keep warm until they rise to about double size, then bake in a quick oven.—If any one will follow this process in every respect, I think they cannot fail to make a wholesome and healthy bread.—I sometimes use a part Canaille to make the yeast, as it will ferment quicker, but of course the bread will not be as white. The yeast should be stirred occasionally for the first two or three hours, but never after it begins to ferment.—*E. E. C. Lyndon, Winoski, Wis.*

Sundry Notes on Cooking, etc.

[The following extracts from letters to the *American Agriculturist* are selected by a lady assistant in this department, in whose judgment we rely, but who wishes us to say that while each selection appears good, she could not positively recommend everything here given without a more thorough trial.—Eds.]

Tomato Soup à la Oysters.—To one quart of canned tomatoes, or others which have been boiled about 15 minutes, add 2 quarts water and boil 15 minutes more; then drop in carefully, a little at a time, enough pulverized saleratus or soda to neutralize the acidity, which you may know by its ceasing to foam—usually about an even teaspoonful to a quart. Then add one quart of rich milk, six or eight crackers pounded finely; butter, salt, and pepper as for oysters; let it boil up and serve immediately. It strongly reminds one of oysters, and is very nice for sick persons as well as highly palatable for well ones.—*Mrs. M. Ingalls, Muscatine, Iowa.*

Pies without Fruit.—Mix 1 teacupful each of sugar, molasses, and water, $\frac{1}{2}$ teacupful of vinegar, and butter the size of a walnut; stew together 10 minutes, and spice to your taste. Then thicken with crumbs of bread [or better of crackers. Ed.], adding a few raisins if convenient or desirable, and bake in crusts.—*Jersey Farmer's Daughter.*

Rice Pudding without Eggs.—Cook one cup of rice thoroughly; add 1 cup of sugar, 3 cups milk, 1 tablespoonful butter, with spice and fruit to the taste.—*Mrs. P. E. Mulher, Victoria, Ill.*

Cooking Beef Steak.—Prepare the steak by pounding and otherwise, as for broiling. Have ready a pan *quite hot*; grease it as for bread, lay in the steak, turn frequently to prevent its adhering to the pan until the juice is extracted. When cooked through, turn the gravy upon a platter in which has been previously put about *half* the usual quantity of butter, with a *little* water. Slightly brown the steaks on both sides, then take up, and boil up a little water in the pan to secure any remaining juices; season as desired. By this method a much larger and richer amount of gravy is obtained, with less butter, than by the usual process.—*Mrs. C. M. H., Hanksbury, Canada.*

Good Home-made Yeast.—The following is in general use in the community where I reside: Boil a handful of hops in two quarts of water about 20 minutes. Pare and grate three good sized potatoes. Add 2 tablespoonfuls of wheat flour, 1 do. of sugar, 1 do. of salt; strain the hop water hot into this mixture, stirring well together; then boil about 5 minutes. Set away to cool to milk warmth, then add a cup of yeast, and keep in a warm place until light and foaming. Put away in a jar or close vessel in a cool place. It will keep some weeks.—*Mrs. L. B. Bradford, Montague, Mass.*

Candy from Sorghum Syrup.—Boil the syrup 20 to 40 minutes according to its previous thickness, until a little dropped into water will harden to brittleness in a minute or two. Then pour it into large dinner plates previously well buttered, leaving it not more than $\frac{1}{4}$ inch thick.

When cool enough, work and stretch it well with two fingers of each hand, smeared with butter to prevent its adhering. It can thus be made beautifully light and porous. When worked enough, stretch it out and cut it into sticks; it thus makes a very nice candy.—*F. C. Smith, Fairfield Co., Conn.*

Fly Destroyer.—C. P. of Fallston, Mo., writes that the following simple preparation, originating with her servant, has proved very effective: "Beat up the yolk of an egg with a tablespoonful each of molasses and finely ground black pepper; set about in shallow plates every two or three days for a week, and the flies be rapidly destroyed, and may be swept up in handfuls."

For Red Ants.—John H. Ferguson, of Rensselaer Co., N. Y., writes, that he has thoroughly cleared an old house of this pest twice, within the past 15 years, thus: "Grease a plate with hog's lard, and set it where the ants are troublesome; they will desert the sugar bowl for the lard. Place a few sticks around the plate for the ants to climb up on. Occasionally turn the plate bottom up over a fire, where there is no smoke, and the ants will drop off into the fire. Reset the plate, and in a few repetitions you will catch all the ants. They trouble nothing else while lard is accessible."

BOYS & GIRLS' COLUMNS.

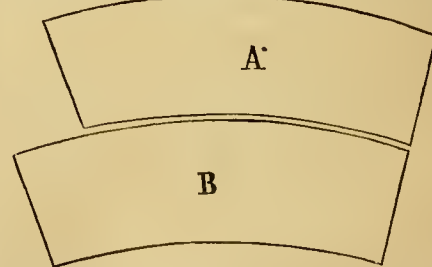
Amusing Toy for the Little Ones.

Cut out from wood the figure of a dancer, somewhat like the one here given. It will be easier to form the head, body, and arms separately, and afterward glue them together. The legs should be quite thin, and hung so as to play loosely upon a wire running across a hollow place cut in the bottom of the body, as shown by the dotted lines in the figure. Keep them separated by a small slip of wood placed between them on the wire. When this is done, take four strong bristles, each about an inch long, and insert them as pins for the image to stand upon. They should be long enough to just keep the feet of the image from touching the floor, or whatever it is set upon.

It will improve the image to paint it in bright colors. Place it upon a tea-tray or tin-pan, letting it stand upon the bristles, then whistle or sing a tune, and at the same time drum with the fingers upon the pan, and the image will dance about in a way to give great amusement to the little folks.

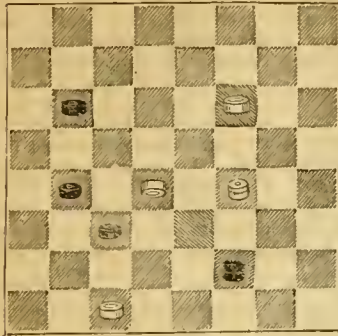
Puzzle for the Eye.

Persons, by practice, may become very expert in judging of distances, and measuring by the eye. It will often afford considerable amusement to test this ability in a person by asking him to mark on the side of a room the height of a man's silk (stove-pipe) hat, measuring from the floor. Very few will come within an inch of it. As another pleasant experiment of the same kind, request some one to draw the size of a ten-cent coin—most per-



sons will give very full measure. The above illustration will also furnish a somewhat similar test. Look at the parts A and B, and judge for yourself how much longer the lower one is than the upper one. Then to prove how near you have come, cut out two pieces of paper of the same size and shape as the figures, and lay one upon the other. The difference in length, when found, will surprise those who have never tried the experiment.

The Game of Checkers or Draughts.

POSITION NO. 6.—White to play and win.
Black.

White.

GAME NO. 6.—DYKE OPENING. (*)

Black.	White.	Black.	White.
1—11 to 15	22 to 17	16—6 to 10	13 to 6
2—15 " 19	24 " 15	17—2 " 9	23 " 24
3—10 " 19	23 " 16	18—10 " 15	25 " 21
4—12 " 19	25 " 22	19—1 " 6	17 " 13
5—8 " 11	(a) 27 " 23	20—6 " 10	13 " 6
6—4 " 8	23 " 16	21—15 " 19	24 " 15
7—11 " 20	29 " 25	22—13 " 26	27 " 23
8—7 " 10	31 " 27	23—26 " 20	6 " 2
9—10 " 15	17 " 13	24—30 " 25	23 " 18
10—3 " 7(b)	26 " 23	25—16 " 19	2 " 7
11—8 " 12	(c) 21 " 17	26—19 " 23	7 " 11
12—7 " 10(d)	28 " 24	27—23 " 26	11 " 15
13—15 " 19	24 " 15	28—5 " 9	22 " 17
14—10 " 26	30 " 23	29—9 " 13	17 " 14
15—12 " 16(e)	32 " 28	—Drawn.	

(*) Is so called from its fancied resemblance to a "Dyke," (Scotch—A fence or stone wall) for, at various stages of the game the pieces form straight lines.

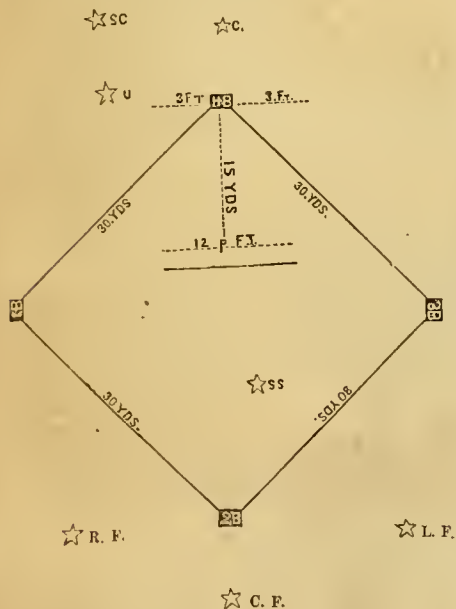
(a) 30 to 25, draws, 22 to 18, Black wins. (b) 9 to 14, draws. (c) 23 to 18, or 28 to 24, Black wins. (d) 7 to 11 White wins. (e) 9 to 14, or 6 to 10 draws.

Solution to Position No. 5. (See May No., page 191.)

Black.	White.	Black.	White.
1—22 to 26	10 to 17	3—26 to 31	17 to 26
2—18 " 22	27 " 18	4—31 " 15	and wins.

How to Play Base Ball.

The game of Base Ball may now be fairly called a national one in this country, just as Cricket is the great outdoor game in England, and Curling in Scotland. Almost every city and village has its clubs, and it is becoming a custom we desire to see more popular, for men to join the



boys in this vigorous pastime, which is admirably calculated to promote health while affording exciting, but innocent amusement. Presuming that all our readers who are interested in the matter would be pleased to know how to play the game well, we propose to give the principal rules and suggestions made by the best ball players.

If possible, select for the ground a perfectly level, open field, 500 to 600 feet square, which should be covered with close, smooth turf. Where there are many players meeting frequently, it is well to have the ground kept in order by frequent rolling. The diagram shows the form and dimensions of the space immediately occupied by the players during a game. A square, measuring 30 yards on

each side, is first marked out. At the corners of this square are the "Bases." *H.B.*, home base, *1 B.*, first base; *2 B.*, 2nd base; and *3 B.*, 3d base, each of these occupies the space of a square foot; on well regulated grounds, the 1st, 2nd, and 3d bases, are marked by stout canvas bags, painted white, and filled with sand or sawdust. At the home base is a circular plate of iron painted white. A line drawn through the center of the home base and extending 3 feet on each side of it, marks the position of the striker.

The pitcher's position, *P*, is marked by two lines parallel to the striker's line, each 12 feet long, the first one 45 feet, the other 45 feet, from the center of the home base. These lines may all be permanently fixed by a plank set edgewise into the ground. This size of the square and the distance for the pitcher are intended for men; boys may reduce the distances about one-sixth. The catcher takes his place at *C*, at such a distance behind the striker, as he may find most convenient to catch the ball. The umpire is stationed at *U*, or, if the striker be left handed, he moves to a point directly opposite, where he can have the best view of the whole game. The scorer, *S*, should be near the umpire so as to readily hear and record his decisions. The letters *R.F.*, *C.F.*, and *L.F.*, signify right field, center field, and left field; *S.S.*, is for short stop—these points are occupied by the "fielders," whose duties will be noted hereafter.

A full game is played by nine on a side, the leader on each side being styled Captain. A larger or smaller number, however, can conduct the game. In playing, one side takes the bat, the other the field; the first choice is decided by lot between the Captains. The fielders, are the pitcher (*P*), catcher (*C*), 1st baseman (*1 B.*), 2nd baseman (*2 B.*), 3d baseman (*3 B.*), short stop (*S.S.*), right, center, and left fieldmen (*R.F.*, *C.F.*, and *L.F.*). If more are in the game, they are stationed by the Captain where he judges they can do best service in catching the balls. The batsmen or strikers, who have the "innings" take their regular turns upon the home base (*H. B.*), or striker's line, and the play begins. Having now stationed the players, we will next tell them what to do.

A Little Boy's Experience.

April 3d.—This is my birthday. I am twelve years old. Mother says I ought to keep a diary. I asked father about it, and he smiled and said it would be a fine thing—for a week. I suppose he meant I would get tired of it in a week. Perhaps I shall, but I am going to try and keep on after I get tired, for mother says that is the way to get things done. I wish I had written something about what happened every week last year. I can remember a good many things. My little brother Freddy was born; grandmother died; Mr. Wilkins's barn was struck by lightning and burned down; father bought the wood lot on the hill; I caught a big pickerel in Weems's pond; my cousin George came from New York, and staid three weeks, etc. I know a good many things happened that I would like to think about again, if I could only remember them. Once in a while something comes to mind that had been forgotten for a long time, and it is almost as pleasant as meeting an old friend. Now if I can keep a diary for a whole year, then I may call all such friends back again, just when I please. They will be like my kite, which sometimes goes away almost out of sight, but I can always pull it in, if the line don't break.

I wonder what father will give me for a birthday present. Last year he gave me my dog Jumper. He's a real wide-awake, lively fellow, and knows more than any other animal on the farm. He's a full blooded Newfoundland. There, he is barking now—he's found something, and wants me, I'm sure. I hope its the wood chuck I saw in the clover lot yesterday. Jumper came near running him into the wall then, but he dodged into his burrow. I'll go and see, and perhaps write some more to-night, if I get time and am not too sleepy.

April 4th.—I was too tired and sleepy to write last night. Jumper had the woodchuck in the wall. I took away a few stones, Jumper dove into the hole, gave a bite and a few shakes, and that was the end of Mr. Woodchuck. I'll tan his skin to make a whip lash of.—Father gave me a pair of young calves for my birthday present. He says I may have them for oxen and break them myself. He will keep them for the work they will do, until they are six years old, and then I may have what they will bring. Then I can buy a gun and a watch, and make mother a handsome present, and get some nice books.

I helped father plow the oat field yesterday. I drove the oxen. It's not very hard work, but there's so much of it to do in a day, that it makes me tired. I mean to break my steers so they will plow without any driver. I received a letter from cousin George, yesterday. He says he is ciphering in Rule of Three. I got almost to it last winter, but I don't believe I can remember those hard fractions all summer. George is just my age, but I am stronger than he is. I hope he will come and see me again this summer. There goes the breakfast bell,

and after breakfast I must go and practice gee-haw-graphy with the oxen all day again I suppose.

An Ingenious Monkey.

An English gentleman relates the following trick of a pet monkey, that was kept chained in his yard. About three feet beyond his reach, stood a trough in which a pig was fed. The monkey was very fond of the barley meal which was frequently given to the pig, but how to get it, while thus fastened, might puzzle even a wiser animal. The monkey, however, hit upon the following plan. While the pig was feeding, the monkey seized the tail of the porker and gave it a sharp pull; the latter turned quickly to return a bite, and in so doing let fall a mouthful of the desired barley meal, which his cunning tormentor immediately appropriated; he repeated the experiment with great satisfaction, until the meal was finished.

Answers to Problems and Puzzles.

The following are answers to the puzzles, etc., in the May number, page 191:

No. 206. *Enigma*.—Pen-knife. One sends us the answer, "buttermilk;" another, "bread-pan," both of which meet the conditions of the question.... No. 207. *Illustrated Rebus*.—*B backward in naught but s a two x l in the x p d n c and f i k c o fall ever under ta kings, or: Be backward in naught, but essay to excel in the expedience and efficacy of all your undertakings....* No. 208. *Conundrums*.—1. When they make a league. 2. When he steals a knife in the day-time. 3. Because they have long studded (*studied*) the heavens.... No. 209. Supply the letter *E*, and it will read: Persevere ye perfect men; ever keep these precepts ten.

The following have sent correct answers up to May 7: Alanson Hey, W. Lewis, A. Jackson, Edwin Andrews, Ruthanna Stratton, John F. Stratton, Luman F. Parmenter, Amanda E. Still, Madison E. Gustin, J. K. Hallock, A. McDonald, Henry Krell, Daniel Bolton, James E. Eshleman, R. Ellis, Wilson J. Spink, Chas. H. Deatrich, Jennie Lucas, Daniel Frohman, Rudolph Halifax, Doe, Henry E. Mann, Sophie E. Mann, Louie Lorillard, L. J. Barton, C. L. Clark, Eden Relder, "Diamond," Ellen A. Carpenter, Emily J. Gregg, M. M. Rand, Thomas H. McMullin.

New Puzzles to be Answered.

No. 210. *Illustrated Rebus*.—Good advice for the young.



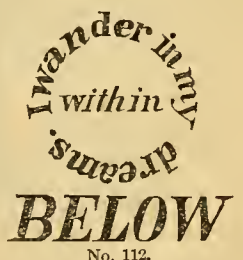
No. 211. *Illustrated French Rebus*.—For students.



No. 212. *Illustrated Rebus*.—Much in little space.

No. 213. *Mathematical Problem*.—A squirrel carried away nine ears of corn from a box, taking three ears away each time. How many times did he go to the box?

No. 214. *Enigma*.—I am composed of 21 letters. My 4, 1, 6, 10, 5, 16, 8, 17 is cultivated and flourishes in China. My 3, 21, 11, 7 occurs on the ocean. My 18, 15, 12, 2, 15, 19, 9 is a very sad expression. My 14, 20, 13, 19 leads men to my 5, 14, 1, 6, 10, 15, 9, 13, 10, 3, 8, 18, 21. My whole is celebrated in History.



The Pet Lamb.

"Mary had a little lamb," thousands of girls and boys will say or think to themselves, as they look upon this pleasant picture. That simple little story in verse, which we used to read many years ago, is the delight of children now, and will be as long as the English language lasts. Why? Because there is *love* in it. A lamb is a very lovable pet. Its innocence and playfulness make it a favorite with all. One of these creatures was many years ago brought up at the home-stand of the writer. It was found motherless and chilled in the field, one spring morning. The ewe had refused to own it, and it was then adopted by two little girls who soon nursed it into a strong, and frolicsome playmate. A young puppy and a kitten were being cared for at the same time, and the three used to take their meals from the same dish, and afterward made great sport by their playful pranks—scampering up and down the yard, barking, bleating, mewing, butting, scratching and biting, each after its own fashion. The final history of the three was somewhat sad. "Dick," the lamb, grew large and saucy. Several times he gave a younger brother of the girls a pretty severe drubbing, butting him without mercy; and he was finally turned into mutton by a butcher who bought and carried him away. Kitty died a victim to experiments with some drug, made by a boy in the family. "Tip," the dog, grew to be a most useful farm assistant. He would drive away or bring home the cows as well as a boy could do, except letting down the bars; but no stray cattle or swine would he allow to trespass on the premises. He was, however, an inveterate fighter, and would attack any dog, no matter how large, that came near him. One day he "caught a Tartar." He challenged a much stronger animal than himself, and in the battle which followed, was so badly injured, that he was killed by his owner to put him out of misery. Thus, one of the pets perished by misfortune, the other two suffered the penalty of bad habits, which had grown out of their youthful sports.

Scene in a Mock Auction Shop.

Our artist heard the old cry of "Going! going! gone!" while passing a store on Broadway, the other day, and stepped in to look on. Having his eyes well trained by long and careful use, he soon saw that it was a mock auction shop. The auctioneer was a sharp looking man with a brazen voice, and a brassy face, selling a gold (brass) watch. Nobody appeared to be buying any thing. One man was pretending to examine a watch, but he was only a "stool pigeon," that is, one who makes believe purchase, in order to lead others into being swindled. Another of the gang was disputing with a not very respectable looking young woman. However, the auctioneer did not seem at all discouraged for want of customers. He talked and hammered away as though doing a most lively trade. On looking a little more closely, our artist discovered something more. He saw two pickpockets at work, one of them busy at the pocket of a man who stood looking at a large bill which said, "Beware of pickpockets," and the other standing ready to take from his companion's hand what he might succeed in stealing. On looking around he also saw a policeman

with club in hand, standing close by, watching the whole proceeding, and ready to pounce on the two rascals. This was one secret of the mock auctioneers' trade. He was trying to keep a crowd of people together, while his assistants picked their pockets, if he himself could not succeed in doing it by selling them sham watches and jew-



THE PET LAMB.

elry. Below is a sketch of the scene. The pickpockets and the policeman are shown, although it may take some careful looking to see them. They are no more concealed, however, than pickpockets and thief catchers usually are, and we hope that after studying out the picture, some will remember it when they come to New York, and keep clear of mock auction shops, and "Beware of pickpockets," in a crowd. The old proverb, "Birds of a feather

Why is there Uniformity?

In Baraun's Museum, in this city, among other curiosities, is a bull having three perfect horns; the additional one grows straight out from the center of its forehead. In all other respects the bull resembles other ordinary animals of its kind. Cases are known where horns have grown on the heads of men and women. One such was recently described in the Medical and Surgical Reporter, published in New York. Many of our readers may have seen persons having six fingers on each hand, and six toes on each foot; there are many such in the world. The Bible speaks of a race of giants in Ancient Palestine, who had this peculiarity. Other strange "freaks of Nature," as they are called, occasionally appear, such as lambs with an extra leg, or calves with one head too many. Among vegetable growths there are occurrences not less singular. Not very many years since a beech tree was observed whose branches all drooped like those of a weeping willow. Cions from this were grafted into other trees, and by this means the weeping beech was propagated, so that now it is for sale at most large nurseries. Similar unaccountable "sports" are found among flowers and vegetables of almost every variety; the four-leaved clover will occur to many as a common example. Now to us, the wonder is not that such things occur, but that they do not take place more frequently. Why is it that among the thousand million and more human beings on the globe, the innumerable animals, and the countless vegetables, so few are found which do not follow the same general formation. This is the more worthy of thought when we notice that no two individuals of any species are exactly alike in all particulars. Each one has some peculiar mark by which it may be distinguished from every other one. Thus, no two faces have precisely the same shape, color, and expression, yet in every one we expect to find two eyes, a nose, a mouth, and all in the same relative position. So with animals. The different sheep in a large flock may

each be recognized by an experienced shepherd, as each has its own peculiarities, but not one in ten thousand shows any departure from the regular pattern. The same thing is true in all living things. This is the more wonderful when we consider the great number of processes going on in each individual body, by which the different parts of the frame are built up. One part of the blood is to furnish bones, another flesh, other portions supply nerves, skin, hair, nails, etc., etc. How few apparent mistakes are made in the complicated work. What confusion would result if it were otherwise. Who could tell that what should be a finger nail might not soon grow from the end of his nose; or that a tuft of hair should not spring from the center of his eye, or that the bony substance might not be deposited on the outside, and soon envelop him in a shell like a lobster! What if there were uncertainty as to how apples or peaches would grow, one year showing them on the branches, the next clinging to the roots of the tree, like potatoes? These few illustrations from the thousands that might be found in every department of life, show as plainly as any evidence can, that an intelligent controlling power directs the course of all matter, causing it to conform to a general plan which He has laid out, and which He in mercy as well as wisdom designs shall be observed by all His creation, thus preserving harmony throughout all nature.



SCENE IN A MOCK AUCTION SHOP.—A PUZZLE PICTURE.

flock together" will be found especially true in this case. "Cheap jewelry," gift enterprises, mock auctions and lotteries, pretended "Bankrupt Stocks," etc., are generally conducted by those whose company it is safest to avoid.

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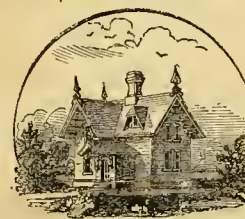
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Commercial Matters—Market Prices.

The following condensed, comprehensive tables, carefully prepared specially for the *American Agriculturist*, show at a glance the transactions for a month, ending May 15, 1866, and the exports of Breadstuffs from this port thus far, since January 1:

TRANSACTIONS AT THE NEW-YORK MARKETS.									
RECEIPTS.	Flour.	Wheat.	Corn.	Rye.	Barley.	Oats.	25 days this month.	153,000	5,500
24 days last month.	167,500	9,800	58,000	4,100	134,000	117,000	24 days this month.	428,000	1,561,000
24 days last month.	218,500	389,000	1,418,000	137,000	374,000		24 days this month.	428,000	1,561,000
24 days last month.	218,500	389,000	1,418,000	137,000	374,000		24 days this month.	428,000	1,561,000
Comparison with same period at this time last year.									
RECEIPTS.	Flour.	Wheat.	Corn.	Rye.	Barley.	Oats.	25 days 1865.	5,500	1,100
24 days 1866.	153,000	2,700	153,000	2,600	67,000	197,000	24 days 1865.	339,000	22,700
24 days 1866.	428,000	1,561,000	1,215,000	208,000	35,000		24 days 1865.	219,000	655,000
24 days 1866.	428,000	1,561,000	1,215,000	208,000	35,000		24 days 1865.	219,000	655,000
Exports from New York, January 1 to May 14.									
1866.	Flour.	Wheat.	Corn.	Rye.	Oats.		1866.	354,050	109,467
1865.	439,003	219,916	143,767	141	24,915		1865.	439,003	219,916

CURRENT WHOLESALE PRICES.

	April 16.	May 16.
PRICE OF GOLD.	125 3/4	129 1/2
Flour—Super to Extra State	80 @ 8 80	87 40 @ 9 75
Super to Extra Southern.	9 00 @ 15 50	10 40 @ 17 25
Extra Western.	7 45 @ 15 50	8 60 @ 17 25
Extra Genesee.	8 40 @ 12 00	9 80 @ 14 50
Superfine Western.	6 80 @ 7 30	7 40 @ 8 20
RYE FLOUR.	4 25 @ 5 25	6 50 @ 7 00
CORN MEAL.	3 50 @ 4 15	3 85 @ 4 25
WHEAT—All kinds of White.	2 20 @ 2 30	2 30 @ 2 00
All kinds of Red and Amber.	1 55 @ 2 43	1 80 @ 2 55
CORN—Yellow.	80 @ 85	85 @ 88
Mixed.	80 @ 83	75 @ 85
OATS—Western.	40 @ 58	43 @ 61
State.	60 @ 62	63 @ 64 1/2
RYE.	60 @ 80	85 @ 1 15
BARLEY.	85 @ 1 22	80 @ 85
HAY—Bale 100 lb.	50 @ 70	60 @ 90
Loose.	55 @ 80	65 @ 95
STRAW, 100 lb.	55 @ 1 00	60 @ 1 10
COTTON—Middlelands, 10 lb.	37 @ 39	33 @ 35
Hops—Crop of 1865, 10 lb.	25 @ 65	20 @ 65
FEATHERS—Live Geese, 10 lb.	50 @ 70	55 @ 88
SEED—Clover, 10 lb.	9 @ 11 1/2	8 @ 11
Timothy, 10 bushel.	4 50 @ 5 20	6 00 @ 6 75
Flax, 10 bushel.	2 40 @ 2 65	2 50 @ 2 70
SUGAR—Brown, 10 lb.	9 1/2 @ 13 1/2	9 1/2 @ 13 1/2
MOLASSES, Cuba, 10 lb.	37 @ 39	40 @ 65
COFFEE—Rio, (Gold price), 10 lb.	17 @ 21	15 1/2 @ 30 1/2
TOBACCO, Kentucky, 10 lb.	6 @ 30	6 @ 30
Seed Leaf, 10 lb.	5 @ 45	5 @ 45
Wool—Domestic Fleeced, 10 lb.	42 1/2 @ 75	35 @ 45
Domestic, pulled, 10 lb.	30 @ 65	25 @ 38
California, unwashed, 10 lb.	20 @ 40	12 @ 38
TALLOW, 10 lb.	11 1/2 @ 11 1/2	11 1/2 @ 13 1/2
OLE CAKE—10 ton	43 00 @ 48 00	46 00 @ 48 50
PORK—Mess, 10 barrel	25 50 @ 25 75	29 00 @ 30 75
Prime, 10 barrel	21 25 @ 22 00	21 50 @ 23 00
BEEF—Plain mess, 10 barrel	15 50 @ 19 50	16 00 @ 20 50
LARD, in barrels, 10 lb.	16 1/2 @ 18 1/2	19 @ 22 1/2
BUTTER—Western, 10 lb.	25 @ 45	32 @ 43
State, 10 lb.	40 @ 60	35 @ 48
CHEESE	16 @ 22	10 @ 20
BEANS—10 bushel	1 25 @ 2 50	1 00 @ 2 60
PEAS—Canada, 10 bushel.	1 20 @ 1 25	1 20 @ 1 25
EGGS—Fresh, 10 dozen	36 @ 25	18 @ 21
POULTRY—Fowls, 10 lb.	27 @ 30	28 @ 30
Turkeys, 10 lb.	2 50 @ 3 25	3 35 @ 4 50
POTATOES—Merceds, 10 bbl.	2 50 @ 3 25	3 35 @ 4 50
Peach Blows, 10 barrel	2 75 @ 3 00	4 00 @ 4 37
Buckeyes—New, 10 barrel.	1 75 @ 3 00	3 00 @ 3 25
APPLES—10 barrel.	2 00 @ 7 00	3 00 @ 6 50

Gold has risen to 130 1/2, influenced by the less favorable financial and commercial advices from Europe.... The breadstuff trade has been quite animated, during the past month. Reports of the deficiency of sound wheat of last year's growth, and exaggerated accounts of the poor appearance and prospects of the growing crop of winter grain, have led to heavy purchases of flour and wheat in all the leading markets of the country at rapidly advancing prices. A very considerable portion of the business of the month was on speculative account. The regular trade inquiry, however, has been good, and has tended to strengthen confidence in the upward course of the market. Toward the close, the extreme buoyancy was not maintained, as many of the speculative holders, eager to realize, were disposed to make some concessions to buyers. The latter are less inclined to operate, as they anticipate an early reaction, which will enable them to buy on more favorable terms. The current receipts are very light, and stocks here are diminishing gradually. The resumption of inland navigation has not thus far added to the available supplies. Corn has been freely offered at easier rates, which has led to a revival of the export demand, and the market closes more firmly. There has been a livelier business in Rye, Barley, and Oats at, however, irregular prices.... Provisions have been more sought after, mainly on speculative account, and Hogs products have advanced. Beef has been also quoted firmer. Butter and Cheese have declined, under more liberal arrivals.... Cotton fell off materially early in the month, under very unfavorable advices from England, but closes firmly, with a fair inquiry. The stock now here is about 160,000 bales.... Wool has been in more demand, and though prices have not advanced, the market closes in favor of sellers. There is now some disposition to purchase on speculation, in anticipation of a rise in prices.... Hay, Straw, and Hops, have been active and steady.... Seeds in less request, closing irregularly.... Tobacco dull, but without material change in price.

New York Live Stock Markets.—Beef Cattle.—The supply, for a month past, has been

good, and on May 7th very large, reaching nearly 7000. With a full demand, owing to the cold weather which has increased the consumption of meat, and prevented the usual catch of shad, prices have been well maintained. The sales to-day are 16c@17c per lb. estimated dressed weight for really good, first quality of cattle; a few extras 17 1/2c@18c; medium to common 15c@14c; poor to worst 13 1/2c@12 1/2c.... **Milk Cows** have increased in value a little recently, owing to light receipts and increased demand. Medium to good \$55@56; good to first quality \$70@80; extras \$85@90; an occasional fancy animal at \$95@100 and upward; inferior \$50@40, with a few bad ones at \$35@30.... **Veal Calves**, two and three weeks ago, were over-abundant and prices much depressed. Last week and to-day, with somewhat lighter receipts, prices are firmer. Very good and extra calves sell at 9c@10 1/2c per lb. live weight; good to common 8 1/2c@7 1/2c; poor 7c@6c.... **Sheep and Lambs**—Receipts fair, and prices very changeable from week to week. Last week they were very low; to-day good sheared sheep sell at 7 1/2c@8 1/2c per lb. live weight; medium and common 7c@6c. Spring lambs are arriving freely and sell at \$4@4 1/2 each, or 12c@16c per lb.... **Live Hogs**.—Receipts have been unusually large for the season, and prices variable. To-day Western corn-fed sell at 10 1/2c@10 3/4c per lb. live weight.

GENERAL PREMIUMS.

ONE MONTH

yet remains for all who want any of the general premiums in the table below, to secure them. During May several entirely new lists have been made up, and many lists under way have been filled. A thousand others can do the same this month. We have many partially completed lists on our Premium Record, waiting for a few more names only. With the six numbers of this volume to show what this paper is, it will not be difficult to secure subscribers. We have not room to describe the premiums which are all very good, but will send a full **Descriptive Sheet** free to all desiring it. As it is too late to send grape vines now, we will send premiums 5 and 6 next autumn, if they are secured this month. We omit 2, 3, 4, and 8, as it is too late to use them.

Table of Premiums and Terms, For Volume 25.

Open to all—No Competition.

Names of Premium Articles.

1—GOOD BOOKS—See terms below*	27	92
5—Iona Grape Vines (12 of No. 1)	18 00	19 65
6—Concord Grape Vines (100 of No. 1)	12 00	15 40
9—Downing's Landscape Gardening	56 50	38 88
10—American Encyclopedia	12 00	19 65
12—Worcester's Great Illustr'd Dictionary	12 00	20
13—Any back Volume <i>Agriculturist</i> ,	1 75	26
14—Any Two back Volumes do	3 50	32
15—Any Three do do do	5 25	32
16—Any Four do do do	7 00	32
17—Any Five do do do	8 75	32
18—Any Six do do do	10 50	32
19—Any Seven do do do	12 25	32
20—Any Eight do do do	14 00	32
21—Vol. XVI to XXIV do	15 75	32
22—The County Election, Steel Plate Col'd.	10 00	18 60
24—Halt in the Woods do do	10 00	18 60
25—Mortons' Best No. 5 Gold Pen, Silver Case	44 50	12 32
29—Best Family Clothes-Wringer	10 00	15 34
30—Dor's Washing Machine	12 00	19 65
31—Tea Set (Best Silver Plated)	50 00	67 240
43—Sewing Machine (Grover & Baker)	55 00	70 270
44—Sewing Machine (Florence)	63 00	70 270
45—Sewing Machine (Wheeler & Wilson)	55 00	70 270
46—Sewing Machine (Wilcox & Gibbs)	55 00	70 270
47—Sewing Machine (Elias Howe)	60 00	75 290
35—Melodeon (Best Four Octave)	57 00	80 300
36—Melodeon (Best Five Octave)	112 00	140 450
37—Piano, 7 Octave (Steinway & Sons)	500 00	500 1500
38—Barometer (Woodruff's Mercurial)	12 00	19 70
39—Barometer (Woodruff's Mercurial)	18 00	22 95
40—The Aquarius, or Water Thrower	11 00	19 65
41—Buckeye Mowing Machine No. 2	125 00	150 480
42—Allen's Patent Cylinder Plow	30 50	31 100

No charge is made for packing or boxing any of the articles in this Premium List. The Premiums, 1, and 13 to 25, are DELIVERED to any part of the United States and Territories, free of all charges. The other articles cost the recipient only the freight after leaving the manufactory of each. Every article offered is warranted new and of the very best manufacture.

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[American Agriculturist, Jan. 1863.]

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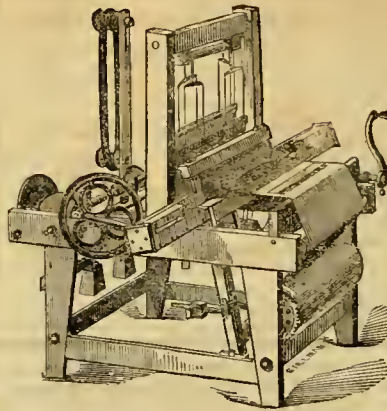
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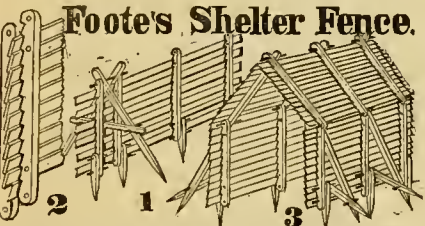


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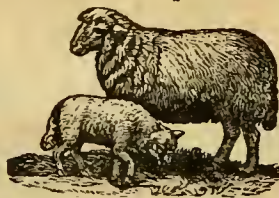
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J. Kerrigan, 2 lbs Gunpowder at.....	1.25	do	2.50
do 2 lbs Imperial at.....	1.25	do	2.50
S. B. Crosby, 4 lbs Gunpowder at.....	1.25	do	5.00
D. Pierson, 2 lbs Japan, uncolored, at.....	1.25	do	2.50
E. Ward, 8 lbs Young Hyson at.....	1.25	do	3.75
John Patch, 2 lbs Young Hyson at.....	1.25	do	2.50
do 2 lbs Gunpowder at.....	1.25	do	2.50
do 4 lbs Java Coffee, green, at.....	40	do	1.60
Total.....			\$92.85

The packages you will please put in one box, if possible and direct to me at Augusta, Hancock County, Ill.

Yours respectfully,

JOHN P. PATCH

P.S.—The grocers here think that we are going to get swindled in this operation. Please do the best you can by us.
P.

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JOHN P. PATCH.

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And so on, until the tenth annual payment, when all is paid, and dividends still continue during the life-time of the assured.

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VOLUME XXV—No. 7.

NEW-YORK, JULY, 1866.

NEW SERIES—No. 234.



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HEAD OF 4TH DUCHESS OF THORNDALE.—DRAWN FROM LIFE BY EDWIN FORBES, FOR THE AMERICAN AGRICULTURIST.

4th Duchess of Thorndale, bred and owned by Samuel Thorne, of Thorndale, Duchess County, N. Y.—Red; calved July 10th, 1859; Got by 2d Grand Duke (12961).—Dam Duchess (—) by Duke of Gloster (11382); g dam Duchess 66th by 4th Duke of York (19167); gr g dam Duchess 55th by 4th Duke of Northumberland (3849); gr gr g dam Duchess 38th by Norfolk (2377); gr gr g dam Duchess 33d by Belvedere (1706); gr gr gr gr g dam Duchess 19th by 2d Hubback (1423); gr gr gr gr gr g dam Duchess 12th by the Earl (646); gr gr gr gr gr g dam Duchess 4th by Ketton 2d (710); gr gr gr gr gr gr g dam Duchess 1st by Comet (155); gr gr gr gr gr gr gr g dam by Favorite (252); gr gr gr gr gr gr gr gr g dam by Daisy Bull (186); gr gr gr gr gr gr gr gr gr g dam by Hubback (319); gr gr gr gr gr gr gr gr gr gr g dam by J Brown's Red Bull (97).

In this country we know very little about long lines of ancestry among our citizens, and though now and then some old family can trace its descent back five or six generations, not one man in a hundred can tell the names of his great grandfathers. This may give interest to the fact that the beautiful cow whose head is faithfully presented above, is the 10th in a line of "Duchesses," and that her pedigree on the side of her dam may be traced back uninter- ruptedly 15 generations. They are an honored

ancestry too, and worthful, as we shall show.

4th Duchess of Thorndale is of a prevailing red color of almost faultless, and for her large size, delicate proportions; her head, small and boney; eyes, full and very prominent, and the jaws, remarkably clean. Her coat is like broadcloth, and her skin pliable and soft as buckskin. To say nothing of the first Duchess, Mr. Colling's White Bull, Favorite, the Hubbacks, and the Dukes of Northumberland, her rich heritage of blood is shown by the fact that

her sire, 2d Grand Duke, cost 1000 Guineas in England; her Grand Sire, Duke of Gloster, 650 Gs.; her Grand-dam, Duchess 66, sold for 700 Gs. at the Ducie Sale, and her (66th's) sire at the same sale sold for 500 Gs. (These are Guineas, not Pounds Sterling, remember.) Her son, 6th Duke of Thorndale, by 3d Duke (27749), now 4 years old, is emphatically the finest bull we ever saw. She is herself the queen of the Thorndale herd, and, it is no more than fair to say, that no picture, however fine, can do her justice.

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Back Volumes Supplied.—The back volumes of the *Agriculturist* are very valuable. They contain information upon every topic connected with rural life, out-door and in-door, and the last nine volumes make up a very complete library. Each volume has a full index for ready reference to any desired topic. We have on hand, and print from stereotype plates as wanted, all the numbers and volumes for nine years past, beginning with

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AMERICAN AGRICULTURIST.

NEW-YORK, JULY, 1866.

If farmers get what they hope and pray for, we shall have hot weather throughout this month with just rain enough to keep things vigorously growing, and the rain will most of it come in showers, without wind, at night. A few drizzly days, coming in pairs at intervals through the month, would be most gratifying to those who want to reset tobacco plants, or to plant out cabbages, but what we most need is bright clear weather for haying. We caution our readers not to over work, and so lose an hundred fold more than they gain. Let farmers see to it that their men and teams have time to eat and rest. Give the hands good wages, good food, pleasant quarters, and friendly treatment, and exact in return, prompt, active, diligent labor, and devotion to their employers' interests. A word to those who have never had the charge of farm hands:—Take care that you know how much a man should do in an hour or day, and never exact too much, nor be satisfied with too little. He is a very faithful man who will not take advantage of the ignorance of his employer in these particulars. When there is necessity for lively work, or work during hours of rest, the men will always give it freely if they see the need, but a few "spurts" gotten up without cause, will do much towards spoiling otherwise good hands.

Hints about Work.

Many of the hints given last month are equally applicable to this, especially those that have reference to buildings, dairy matters, haying, etc.

Grain Fields may demand attention early in the month, particularly if many coarse weeds are seen in them. When possible, it will pay to go into the grain and pull, or cut with a spud, such weeds as dock, mustard, charlock, etc. After the grain heads have their development, look out for

Saving Seed Grain.—Inspect the whole field and pick out those parts which are best; pull the weeds, and inferior stools of grain. If it can be done, a hoe may be used in loosening the surface, and drawing earth up to the plants to some extent. Clip off also inferior heads, so that a very superior stand only is left. Allow these selected portions to become dead ripe, at which time cut with a sickle or very carefully with a cradle, and handle the sheaves so that the grain will not shell out.

Oats, blown down or lodged from their own weight, should be cut and cured for hay. Wheat and barley may sometimes be treated in the same way, but they fill better than oats after they lodge, not being so leafy.

Barley.—Cut before fully ripe, and protect from rain in well made stacks. There is a great difference in price between that well and that poorly handled in harvesting, and the gain in the feeding quality of the straw will pay over and above for the labor. Eastern farmers, who raise much grain, ought to have

Hay Caps.—Perhaps it will not pay to use them at the West, but in the Eastern and Middle States it will, though we apprehend there have been very few made within the last four years.

Wheat is especially benefited by them, for it is best to stook up the sheaves almost as soon as cut, not giving the straw a chance to dry much. Cut wheat before it is ripe, while the heads are just beginning to droop, and the kernels are in the dough. To this end on very large farms it is best to have different kinds of wheat ripening one after another. Both hay and grain

Stacks are best built long and narrow. One side

being a little higher than the other, a course of 16-foot boards will cover the stack. The boards may be nailed together in threes. Such a stack may be made with a horse fork, and a simple pair of shears.

Hoeed Crops.—If we were directing the preparation of the soil for corn, potatoes and other root crops, we might say that a lack of manure could not be made good by subsequent treatment, but nevertheless we will say now that it is also true that frequent and thorough tillage will do as much for these crops as manure, though in a different way. It will defend against drouths; it will let the air into the earth, with moisture, and it will promote the disintegration and decomposition, thus affording the plants a fuller benefit of the manure and fertility of the soil.

Corn.—At the last hoeing, turnip seed may be sown, and hoeed in.

Potato Ground.—If dug early for market, set cabbages as fast as the ground is cleared.

Cabbages may also follow field peas if the ground is rich, and if not, a fine rich compost may be plowed in. (See Hint last month.)

Corn Fodder.—Corn, sorghum, millet, and Hungarian grass may be sowed for soiling, or for hay.

Tobacco.—The labors in the tobacco field will be steady and irksome, but a good crop depends upon having every spot in the field occupied by a good plant as early as the first week in July, and then hoeing thoroughly, keeping the ground loose and open, all the weeds down, and the worms picked off. Poison tobacco worm moths, see basket item.

Grass.—Cut and cure grass whenever it lodges badly, even though the rest of the field cannot be cut. Cut Timothy when just out of blossom, and clover when in fullest bloom. All grasses should be cut before they are tough and wiry.

Mowing Machines and Hay Tedders make quick work with hay. Cut the grass when the dew is off, and within half an hour follow with the tedder and repeat the tedding as often as once in half an hour until past midday; then, when the grass is hottest, rake into windrows, and throwing it into cocks let it lie till the next day;—or keep the tedder going till 2½ o'clock, and then rake up and get in all cut before 11. All cut before noon may be gotten in in the forenoon of the next day, if the weather is good. When you have not these machines, try the following plan for

Curing Hay.—Stir well as soon as the sun is hot, and when the grass is well wilted and hot, rake it into loose windrows; turn these frequently, shaking out wet locks until say 3½ o'clock, then cock up and let these lie a day or two if need be, but employ the first convenient sun-shine after the next day to shake the cocks out and warm them through; then get the hay in. This curing in the cock is especially good for clover, but all hay is sweeter for it. It should never get dry and parched. If dried slowly, the juices have a sort of honey-like character, and will neither sour, mould, nor ferment in the mow, nor will the leaves and heads drop off.

Turnips.—Sow Cowhorn, or Purple-top Strap-leaf, both good sorts. Sow in drills, except on ground that cannot be plowed, or among other crops. Usually after the 20th is early enough.

Buckwheat must be sowed before the 20th usually; though many take the risk of early frosts, which are fatal to the crop, and delay to the last of the month. The kernels fill better in the cool weather later in autumn, if frosts hold off. 24 to 32 quarts of seed per acre is the usual quantity.

Animals of all kinds require the farmer's attention during this as much as any other month; that is, a lack of needed care is just as injurious. See that all have pure water—if possible, running water—always within reach. Change pastures often enough, so that none shall get very short, and provide extra feed of corn, grass, oats, etc., cut green and wilted before feeding, if there is any failure of pasturage. Feed and water working cattle and horses well, regularly, and give regular rest. Take care of harness or yoke galls, bathing with cold water and shifting the harness, padding it, or the yokes of cattle. See

items in the "Basket" on the *Sheep-bot*, or grub in the head, and on *warbles*, or grubs in cattle's backs.

Orchard and Nursery.

We shall probably have a fair crop of all kinds of fruit, except peaches, and in some localities the grapes will be short from the killing of the new shoots by frost. If we expect successfully to raise

Peaches, some mode of culture must be adopted, which will protect the buds from the severe cold of winter. In April last we gave an account of a plan followed in Ohio. Others cut the young tree back at planting, and thus cause all the limbs to start near the ground, and these as they grow are trained by stakes into a nearly horizontal position, so that they may be readily covered with earth or litter during the winter. Whoever hits upon and adopts a practicable method for preserving the buds from the effects of cold, will find it profitable, as the demand increases faster than the supply.

Birds and Insects are the theme of a large portion of the letters we now receive in this department. In cultivation we have broken up the natural order of things, and must not be surprised if now insects and now birds are a source of annoyance. The best way we have seen to keep off birds is practised by Mr. Knox's workmen, who make small wind-mills, so arranged as to make a clatter, and put them up here and there in the vineyard. We have said enough last month about the Tent Caterpillar, and have only to add that one correspondent finds a mulden-stalk, fastened to a pole, a very efficient brush with which to dislodge the pests.

Borers were sufficiently discussed in May on page 187. If the trees were not protected, they should be looked to before the eggs hatch, and the grub finds its way into the trunk. Read the May article.

Pruning may now be done on old or neglected orchards; take out superfluous limbs, and head back those disposed to too vigorous growth.

Budding is sufficiently described on page 258, to enable any one to practice it. If this year's buds do not take, the same stocks may be grafted next spring. We cannot too often insist upon the necessity of care in selecting buds or clons for propagating. It is a notion among many that merely budding or grafting a tree helps its fruitfulness. The object of these operations is to get a kind of fruit that we know to be good, rather than take the rare chance of a seedling stock's producing choice fruit. Therefore get buds from only desirable varieties.

Thinning should not be omitted. Sufficient is said in an article on page 258.

Layers may be made of vines and shrubs as soon as the present season's growth gets firm. Grape vines layered now will have good roots by autumn. Prepare the soil well, and if it is light, use a good mulch over the layer to keep it from drying.

Weeds should be kept from occupying the ground, whether in orchard, nursery row, or seed-bed. Seedling stocks, when young, are apt to suffer from weeds; they need as careful weeding and thinning as any other plants. It is not too late to

Mulch trees, and it should be done with those planted this spring, as it will save many that would not survive without troublesome watering. Besides the usual mulches, we have seen shavings from a planing mill used. Anything that will prevent evaporation, from stones to bog-hay, will answer.

Grafts set this spring still need the care suggested last month. It often happens that the stock will throw out vigorous shoots, which will rob the graft of nourishment and cause it to become feeble or die. Rub off all such as soon as they appear, and control the growth of the grafts by pinching.

Seedlings, especially those of evergreens, will need shading as directed on page 147 (April.)

Seeds.—The collection of these needs care. As soon as the ornamental shrubs ripen their seeds, collect and sow, or keep in earth. Collect cherry pits and seeds of other fruits.

Slugs upon pear and cherry trees are to be dusted with lime from a bag of open texture tied to a pole

Kitchen Garden.

June opens with cold rains, and if these are long continued, many seeds will rot in the ground. Lose no time in replanting. See article in "Basket," "Not too Late" for some of the things which may be successfully sown this month. In all profitable gardening the land is kept constantly at work, producing two and sometimes three crops in the year.

Transplanting still needs to be done with late cabbages, etc. It will be successful in the hottest weather, if the holes are watered before putting in the plants, and the plants are properly prepared by grouting, i. e., enveloping their roots in mud.

Vacant Places.—Many allow the land from which an early crop has been taken to lay idle and run to weeds. This should never occur. Fill up with ruta-bagas, fall spinach, and other late crops.

Asparagus.—Now that cutting has ceased, encourage as much growth as possible to repair the loss. A dressing of manure will not come amiss, and weeds should be kept from the bed until the tops shade it. If the larvæ of the beetle appear—small, black, leech-like bodies—cut all infested branches and burn them.

Beans.—Limas are usually allowed to run too high. Most vines will go to the end of their support before they begin to bear, and the Lima bean may be made to fruit earlier by only allowing it to run as high as one can reach. Silted string beans are very good in winter, and a planting made now will give a supply.

Beets may be planted for a late crop, which will be realized unless very dry weather comes on. Hoe often, and as soon as large enough, thin to 6 or 8 inches in the row.

Cabbages and Cauliflowers.—The later plants are to be put out as soon as large enough. Plenty of manure, with some lime, which is said to prevent club-foot, should be put upon the land. Caterpillars are to be looked out for and hand picked, and slugs trapped as recommended on page 257.

Celery.—Those who grow in trenches should see that the bottom of the trench is well enriched. For a complete account of flat culture see an article in *Agriculturist* for July, 1865.

Carrots.—Keep well hoed until the tops prevent working, and sow seed if young carrots are wanted.

Corn may still be planted to give a supply for late use and for drying.

Cucumbers for pickles may be sown in well enriched hills. Select the best of the early crop for seed.

Egg Plants.—Give good cultivation, liquid manure and mulch.

Endive.—Sow for a late crop of salad.

Herbs.—These are in perfection just at flowering time, and there is the time to cut. Dry in the shade and preserve from flies and dust.

Lettuce, if sown this month, is apt to soon run to seed, unless it is in a partial shade. The Silesian is best at this season.

Melons often set more fruit than can be ripened. Remove what seems to be superfluous. Hoe the plants until the growth of vines prevents it.

Onions need continued care in weeding. From the press of haying and other work they are often neglected this month, much to the injury of the crop. If the sowing was properly done, but little thinning will be needed, but, if crowded, thin.

Peas.—Some of the early varieties may be sown. They are very apt to mildew; deep planting tends to prevent this. Gather pods from vines reserved for seed, taking those only that ripen early.

Potatoes.—As the early sorts are dug for use, bury the tops, which soon decay and enrich the soil. Late cabbages, turnips, or spinach, may occupy the ground when the potatoes are off.

Rhubarb.—Flowering and seed bearing tend to exhaust the plant, hence the direction to cut off the flower stalks as soon as they shoot up. Now that fruit is abundant the pulling should diminish or cease altogether, and the plants allowed to recuperate by rest. Give a dressing of manure.

Seeds.—It is better to buy seeds than to save poor

ones. Many take the first and best products of the garden for the table, and use what is left for seed. Just the reverse of this should be the case. The earliest, best shaped, and finest of everything should be chosen. By pursuing this course the kinds will not only not run out, but improve.

Sweet Potatoes.—Keep the ground of the ridges or hills clean and mellow until the vines cover it.

Squashes.—Hoe until the vines get so large as to interfere, then do not disturb them, but allow them to take root. Look under the leaves early in the morning for the black bug, and destroy it, and crush any eggs that may be found. The spotted *Galeruca*, an insect shaped like a lady-bug, but yellow, with black spots, is very destructive to the leaves. They must be caught very early in the morning, as they fly when it is warm. The borer is a great pest in many localities; usually its presence is not known until the whole vine wilts. The grub enters near the root, and if a hole is found, carefully split the vine with a knife, and take him out. Cover the wound with earth if practicable, otherwise bind it up.

Tomatoes.—The large green "worm" devours the leaves and green fruit. If any droppings are seen, hunt for the worm at once, as in every day of undisturbed foraging it makes wonderful havoc with the plants. If the plants are not trained in any of the several ways we have described, they will fall over with the weight of fruit; in this case place brush or some rude support for the branches to recline upon, and thus keep the fruit clean.

Weeds are to be fought all the season. A sharp steel rake, frequently used, will keep them down, and leave the surface open. If a deeper working is desired, use the hoe fork figured last July. This leaves the soil in splendid condition, and in a dry time it will benefit the plants more than watering.

Fruit Garden.

In most places the strawberry harvest is over. Remove the mulch, and fork in a dressing of manure. If plants are needed, allow sufficient runners to grow and take root; otherwise stop them.

Raspberries follow the strawberry, and will now need a daily picking. Some cultivators remove the old canes as soon as the fruit is off, while others prefer to let them remain until the fall pruning. Suckers are to be kept down unless they are needed for new plants, as three or four canes are all that are needed to a stool.

Blackberries.—The crop of fruit is often so heavy as to make it necessary to tie up the branches. A heavy mulch around the vines is beneficial, as it is difficult to use the hoe among them.

Currants, if trained in the tree form, are apt to lose their branches from the weight of fruit, and will need support. Treat the worm with hellebore, and cut away the borer as directed last month.

Dwarf Trees should have the fruit thinned when there is any disposition to overbear. See article on page 259. Dust the slugs with lime, as noticed under Orchard. Trees put out this spring, will be helped by a thorough mulch. The red spider frequently injures the pear; he is a little fellow and his work is often seen before the insect itself is noticed. Frequent syringings of soap suds will keep it in check. The shape of the tree may be controlled, and its fruitfulness increased by judicious pinching.

Grape Vines.—Keep the shoots tied up. Thin freely, especially on vines fruiting the first time. Pinch the laterals to one leaf; if they push again, repeat the pinching, reducing each new growth to one leaf. Bearing canes are to be stopped at 3 or 4 leaves beyond the last bunch. Hand pick beetles and caterpillars. Mildew makes its appearance in small greyish patches on the leaves, new wood, and fruit. See article on its treatment on page 223 (June). Apply the remedy on the first attack.

Flower Garden and Lawn.

Grass, whether on the lawn or edgings to beds, needs care to keep out weeds. Plantains, thistles, and other coarse weeds should be pulled while they

are small. Keep all margins trimmed neatly. Mow often, and if the grass is not heavy, it need not be raked from the lawn.

Borders and Beds should always be kept neat. Dress the surface with the rake, and hand pull weeds that grow up in clumps of flowers and shrubs. Unless flower seed is wanted, remove the clusters or stems after blooming is over.

Bulbs are to be taken up when ripe, which may be known by the fading of the leaves. When dry, they may be packed in papers, or in dry sand.

Tie up all plants that need supports, before they fall over, keeping the stakes as much out of sight as possible. Dahlias need a great deal of care in this respect, and not only the main stalk, but the heavier branches, will require support.

Pruning of shade and ornamental trees may still be done. Evergreens may be shaped by a judicious use of the knife. Hedges, whether deciduous or evergreen, are to be clipped.

Propagation of shrubs, vines, etc., by layers and cuttings, is done when the new growth is firm enough. Many shrubs will grow from cuttings of green wood that are not easily propagated in any other way.

Annuals will need transplanting and thinning. Seed still sown of the quick growing kinds, will probably give plants that will blossom before frost.

Seeds of perennials and other plants should be sowed as they ripen. Many of the perennials do better if the seed be sown as soon as it is ripe.

Roses will be attacked by various enemies, all of which, except the rosebug, will yield to syringing with strong soap suds or tobacco water. The bug must be picked by hand or shaken off and caught upon a cloth. Tie up the new growth of pillar and climbing roses; make layers to increase the stock; cut back the remountants to within three or four buds of the stem.

Bedding Plants may be pegged down to evenly cover the ground, and

Plants in Pots ought not to be neglected. They often suffer from dryness.

Green and Hot-Houses.

There is little to be added to the notes of last month. The plants which remain in the house will need watering, shading, and ventilation, as well as care in regard to insects.

Alterations and repairs, painting and cleansing, overhauling the heating apparatus, etc., is usually put off too late, when the work has to be hurried. Better have everything ready, months too soon than days too late.

Budding of green-house shrubs may be done whenever growing, and prune such as need it.

Potting Material—Old hot-bed manure, good pasture loam, leaf-mold, and clean sand, should be laid in under cover.

Propagate stock for winter blooming from cuttings, and pot rooted cuttings and seedlings.

Camellias and other shrubs, set out of doors, must not suffer for want of shade or water. See that they are not overturned by the wind.

Cold Grapery.

The temperature of the house should be 90° to 95° at mid-day, and sink to about 85° during the night. If there is a lack of sufficient moisture in the borders, mulch those outside, and if necessary, water them with weak liquid manure. Continue to pinch the laterals. The berries will need thinning, removing sufficient to prevent crowding. Slender scissors are made to use in thinning. The amount of thinning will depend upon the variety of grape, it is usually necessary to remove one-half and often more. Sprinkling is to be continued every evening, unless mildew attacks the vines, in which case it must be discontinued and the air of the house kept dry. At the first sign of mildew on the leaves, sprinkle sulphur freely over the floor of the house, and discontinue the sprinkling until the danger is over.



Containing a great variety of Items, including many good Hints and Suggestions which we throw into smaller type and condensed form, for want of space elsewhere.

The Second Half of Volume 25 commences with this number, and new subscribers can begin for a half or whole year, though most persons will desire the six splendid numbers already issued. We solicit a continuation of the friendly aid of our readers, so freely bestowed in the past, in extending the circulation of the *Agriculturist*, promising on our part to spare no effort to make it a useful messenger wherever it may be sent.

To Secretaries of Agricultural and Horticultural Societies.—Please send us your announcements of Fairs, Exhibitions, etc., early, as soon as you see this, if the time is fixed. Moreover, please indicate the State in which County Fairs are to be held. A good share of the circulars that come to us have this important item omitted. Our list of fairs is always eagerly sought for, and we wish to have it as complete as possible.

The American Association for the Advancement of Science.—We are glad to learn that this body, which remained in a state of suspended animation during the last four or five years, is still alive, having survived both the war and its own ungainly name. In former times these meetings used to be both pleasant and useful. Persons engaged in the different departments of science came together at some convenient point and told what they had been doing through the year, and had a pleasant time socially. These meetings were not only useful to the members themselves, but to the communities in which they were held, as they served to awaken a popular interest in matters of science, and showed the people at large that philosophers and savants were not so different from others, but that they ate, drank and had their little quarrels just like other folks. The meeting will be held this year at Buffalo, N. Y., on the 15th of August. Prof. J. Lovering of Cambridge is Permanent Secretary. The sessions are open to the public.

Market Gardening—New Work.—There has long been a demand for a work upon Market Gardening, and we are glad to announce that an experienced New Jersey market gardener has one in preparation. The gentleman engaged upon it has been a frequent contributor to the columns of the *Agriculturist*, and from the practical character of his writings we look for a book of great value. It is his intention to give the whole art and mystery of profitable gardening, adapted both to market growers and the private family gardener.

The Minnesota Agricultural Society will hold its annual exhibition Oct. 3d, 4th, and 5th, at Rochester, Olmstead Co., situated in the heart of a rich agricultural region, and accessible from all parts of the State. We learn that great exertions are being put forth by the officers, executive committee, and others, to make the Fair a very large one, and of extraordinary value to all the cultivators of the State, and to the country at large. It will become every Minnesota farmer to lend a helping hand to the enterprise, both for his own benefit, and for the credit of that rapidly developing agricultural State.

Sundry Humbugs—General Hints.

—We have before us several hundred letters, sent in from all parts of the country, which show that the swindlers are yet active, but with greatly diminished profits. Multitudes of cases are given in which our words of caution and exposures have prevented the sending of money where it would have been inevitably lost. The Post-masters, generally, are doing a good work in warning people who bring in letters to mail to the humbug operators.—The largest class of these are those who offer to sell watches, jewelry, etc., by means of tickets. Some claim to be agents of foreign manufacturers, and nearly all profess to have a stock which must be sold on account of the great fall in gold, or the failure of large establishments. We again pronounce all these statements unmitigated falsehoods! There have been no such failures. The value of gold and silver watches, jewelry, etc., is just as high relatively as ever, as can be learned from any honest, reliable dealer.—Of the great number of persons offering these things, at least three-fourths never intend to make any return for the money sent them. True, when we personally call upon them with the tickets sent us, as we often do, they offer us the article called for by

the tickets, on payment of the sum required, and sometimes it is perhaps worth nearly that sum. But these cases are rare; and further we are usually put off from time to time, as we call, with the answer that the "boss" or head of the concern has just stepped out, or has gone to Philadelphia, or elsewhere, and we must call again, which we often do to receive the same answer.—But their usual course is, to make no reply to letters containing money. If hard pressed, they plead that the money letters were lost by mail, or that the money was abstracted before its arrival. We estimate that of at least \$300,000 sent to this city recently, no response was given for \$250,000 of it. There is a small class of operators, five or six perhaps, who do send out the article they promise, but the cheating is done by making false representations as to the value. They send out tickets (sometimes to be paid for and sometimes not) promising for from \$1 to \$12 to send say a watch "valued at" or "marked at" \$50 or \$60, or \$80, and so on. Some of them intend to, and do send the article promised, but in the end the receiver will find it "valued at" or "marked at" ten times its actual value, if not fifty times. There is a great business done in watches containing cheap "works" put into cases of brass or britannia, but so finely covered with a thin galvanized film of gold or silver that only a practiced eye can detect the fraud until after a few weeks. The cost of these watches is from \$2 to \$3 or \$4, and yet they are "valued at" or "marked at" from \$50 to \$100 each. They are of little or no real value. Some send a little better watch, but one not costing a fifth or even a tenth of their represented value. It is the same with the whole of this jewelry, etc., etc., offered by tickets. The parties operate until the gift begins to wear off, and then change their names. In the letters before us are circulars from a dozen or more parties who have changed their names within two months.... Humbugs are springing up more numerous in country towns. "Henry H. Ulman & Co., Camden, N. J., is a sample of the class. They (or he) offers \$300,000 to be distributed in prizes from \$1 up to \$40,000—a downright swindle that will be patronized by none except fools, but that class "are not all dead yet."... Jason H. Tuttle of Flatbrookville, N. J., one of the biggest swindlers out of jail, we thought had quit business under that name, but we receive frequent circulars and tickets of his issuing. Perhaps they are old ones, as they have no date.... J. Folsom of Moriah, N. Y., forwards us 30 circular letters sent to persons of his name, including at least a dozen different ones to himself. These come apparently from different parties (swindlers), but the hand writing on them shows that several of them were addressed by the same person. We have previously explained that the same operators often run several different concerns.... Many letters of inquiry about different concerns come, desiring answers. To save writing, we say here, every one inquired about is a swindle.... Sewing machine tickets (\$5 to \$10 each) are offered by several parties. Those who send anything, send a little instrument which is sold in quantity at \$2.50 each, and not worth buying at that price.... Those advertising to cure eyes and ears, with apparatus for the former, are little if any better than humbugs.

Pleuro-Pneumonia, not Rinderpest.

—Just as we go to press, we notice an associated press dispatch in the N. Y. daily papers, which purports to be an extract from a circular from the President and Secretary of the N. Y. State Agricultural Society. We have not received the circular and cannot believe that these gentlemen do not distinguish between the *Rinderpest* and the *Pleuro-pneumonia*. The former name is by common consent confined now to the terrible infection which is and has been working such devastation among the herds of Great Britain, while *Pleuro-pneumonia* is applied to the lung murrain, which prevailed in Massachusetts a few years ago, and which has for several years been supposed to be domesticated in the swill milk stables of the city of New York and Brooklyn, whence it is occasionally carried to the farms of the vicinity. The subject comes properly under the consideration of the commissioners appointed under the new Rinderpest law, for the disease called *Pleuro-pneumonia* is exceedingly contagious and liable to do immense damage. The cautions said to be contained in the circular against buying cows from these stables, and advising careful examination of all cows offered for sale, are timely and wise.

American Tea Company.

—To Several inquirers. Before admitting the advertisement, we learned that a large number of our clerks and others had for several months been buying their Tea and Coffee from this Company, without its being known who they were, and that they had been highly pleased with their purchases, both as to quality and price, and were all recommending their friends to the same course. As we have published the advertisements for many months, and received no complaints, we conclude there is no humbug about the establishment.

Soiling Cows.—Few farmers get into the way of soiling cows, except those to whom it is a very important thing to keep up the supply of milk, as when it is furnished to city customers, who will be lost for the season if they cannot have their regular quantity every day, or when the milk is taken to a cheese factory, and the farmer's income bears direct relation to the number of pounds of milk he furnishes. It will pay to cut the best grass on the farm to feed green, rather than to have the milk fall off so much as not to regain its full flow when the dry spell is past. Corn, oats, sorghum, and millet may be sowed any time, and will make either pasturage or green fodder. Turnips, sowed thick, rape seed also, or seed of any of the cabbage or turnip family, will make green forage in a very short time. When cut and fed, green fodder should always be suffered to wilt considerably, as it loses water rapidly, saves weight in carting from the field, and is better masticated and digested.

When to Cut Timothy.—"J. A.," McKean Co., Pa., writes soundly: "One says 'cut timothy hay early,' and another says 'cut it late.' I have tried both ways with working cattle and milch cows, and I value one ton of early hay above two tons of late cut hay. The stock eat the early cut hay clean, waste none, and thrive much better, and do a vast deal more work, than on late cut hay. If the season is favorable, I am generally nearly through haying when others commence. Late cut hay may last longer, and bass-wood chips would last longer still. This question would be settled forever, if men would try the experiment fairly."

The Sheep Gad-fly.—The great distress which sheep suffer from the attacks of this insect (the *Oestrus Ovis*) can hardly be imagined by one who has not seen it. It lays its eggs in July and August, chiefly in the nostrils. That death is occasioned by the grub in the head is not probable, but when great numbers exist in the head of a sheep, the irritation they produce, especially when they take their departure in May and June, is great, but little or nothing can be done for the poor sheep. Tar upon the nose is quite an efficient preventive. It should be applied repeatedly during the summer, and even when smeared above the nostrils has the desired effect, and does not rub off so soon. Hence it is, that, as no passage can be discovered for the grubs to get into or out of the frontal sinuses, (cavities in the bone between the eyes,) many suppose the tar prevents the fly laying its eggs in the bones of the forehead. The eggs are laid in the nostrils, as above stated, the worms which hatch, work their way up into the head, passing through the very thin bones. It is said, too, that the merinos with their woolly foreheads are not troubled with them, but this we cannot believe without further evidence, as it is a matter not covered by our own experience. Very few sheep are free from these grubs, and from one to more than twenty are found.—Capt. Shaff, of White Co., Ind., thinks his sheep are killed by them. He reports taking 21 from one sheep. R. H. Cook also attributes the death of his sheep to the same cause, but his Spanish Merinos are never troubled.

Paring the Frog.—"W. H. B.," Danbury, Conn., asks: "Should a horse be shod so that the frog will touch the ground?" In a state of nature the hoofs of horses wear quite flat and even. We shoe horses only to protect the hoofs against injury on our hard roads, and to prevent too much wear, and the shoe should never be made so as to contract the hoof; neither should the frog be pared away, except when it is torn and ragged. Let it touch the ground if it will. Do not have any nails driven more than half-way from the toe to the heel of the shoe.

The Trial of Mowers and Reapers by the N. Y. State Agricultural Society, for which great preparation has been made, will take place at Auburn, commencing July 10th. Entrees must be made at least one week previously at the Secretary's office in Albany. Schedules of duties of committees, requirements, etc., will be furnished by Col. B. P. Johnson, the Secretary.

The Trial of Implements, Horse Powers, etc., conducted under the auspices of the same society, takes place at the same time and place, and subject to the same conditions. Schedules are prepared for Horse-rakes, Tedders, Hay-presses, Thrashing Machines, Horse-powers, Fan-mills, Hay and Stalk-cutters. Arrangements for Loading Hay, Unloading, Sheaf-binders, and Portable Engines. This meeting will be an exceedingly important and interesting one. Every machine will be put to severe practical tests of every part, under the eye of numerous committees of practical farmers and mechanical experts.

Kidney Worm in Hogs.—S. P. Rogers, Uniontown, Knox Co., Ill. Swine are subject to a variety of parasites, such as *Cysticercus cellulose*, *Ascaris*

suilla, *Spiroptera strongylina*, *Trichina spiralis*, *Distomum hepaticum*, etc., etc. Without seeing the parasites to which you refer, or having a more full description, it would be impossible for us to classify them.

Not Too Late to Plant and Sow.—If there be any land in the garden from which early crops have been removed, it should not lie idle, for it is not too late to get another crop than weeds, from it. If a crop has failed from bad seeds, late frost, insects, or "bad luck," which is usually another name for neglect, it is not too late to put in another. There are yet three months at least of "growing weather," and it is not too late to do a good amount of gardening. The whole class of salad stuffs can be kept going—cress, radishes, lettuce, and endive, the best of all late salads. Pickles are to be looked out for, and cucumbers, the staple pickle, may be planted now with good results; melons will make fruit large enough for mangoes, gherkins, the little prickly West Indian fellows, may be grown if one likes them, and Nasturtiums will grow famously in the hot months. Bush beans, for snaps and pickles, and a patch of Early Sweet Corn may be put in for a late supply. Young beets and carrots may be had for the sowing, as may Kohl-rabi and spinach. Now is as good a time as any other for sowing ruta-baga and French turnips. There are probably other things which may yet be sown. Better plant every spare space and get only a partial return, than to allow it to run to weeds, or to keep it clean and get nothing.

A New Way of Raising Forest Trees.—The N. Y. Times, in matters relating to agriculture and horticulture, manages to print more absurdities and crude things, than any other daily paper, and that is saying a good deal. Here is something from its issue of May 27th, which, while it may mislead a few, can only be amusing to those who have but the most general notions about propagating plants.—We quote: "A correspondent, writing to us on this subject, Raising Forest Trees, says he knows of a case in which the experiment of sowing the pollen of the elm, maple and other hard-wood trees has been made with perfect success. That of the English and American varieties of elm, and the maples, never fails to grow in moderately good soil. Our correspondent is satisfied from his own observation that if the pollen could be scattered over any good soil, even if in no other way than by the high winds which prevail on those plains, it would in many cases, particularly if the soil is at all loose, produce young trees. Whether they would stand the heat and want of shade of the region referred to, is, however, a question for decision. Bushels of the pollen of the elm and maple trees can be gathered at this season at any place where these trees abound, and that of some others can be had later."—How could a paper print such nonsense? When this writer has raised his trees from pollen, we recommend him to keep a flock of cocks for their eggs, and a herd of bulls for dairying purposes.

Early Peaches.—Early in May we had from the orchard house of Isaac Pullen & Son, Nightstown, N. J., some very fine specimens of peaches. The variety was Hale's Early, beautiful to look at and as good as they looked. This variety besides being very early and good, is also a very knowing peach, for one of the specimens, instead of taking on the usual red cheek, blushed into the name of the senior Publisher. This producing names on fruit is a very pretty trick. It is done by cutting out the letters from a piece of paper and binding the paper on the fruit just before it colors. The light passes through the openings in the paper and produces the color, while the rest of the fruit remains green.

Sweet Hard-shelled Almond.—"L. H. C.," New Madison, O.—This almond is usually budded on the plum. The tree is hardy in N. Y. State, and will probably do well with you. It is worth cultivating for its beauty while in blossom, even if it yielded no fruit.

Warner's Fruits.—We are able to announce, as we go to press, that we have in hand a book on American Fruits, to be fully illustrated and brought down to the present season, by that distinguished pomologist Dr. JOHN A. WARNER, whose name alone will place it among the standard literature of this subject.

Gladiolus from Seed.—"Subscriber" has often tried to raise Gladiolus from seed. "They come up well and grow finely during the spring and summer, and that is the last of them." As soon as the leaves begin to turn yellow, water should be withheld and the pots kept until spring in a dry place where they will not freeze.

French Flour in New York.—Two or three small invoices of French flour (equal in quality to the highest grade of Southern Ohio Family Extras) have

been received and sold in the market within the past month at \$14.50@ \$15 per 100 lbs.

The Strawberry Crop.—We have made several incursions upon the strawberry growers, but as we go to press before our observations are completed, we must defer our notes until another month. Suffice it to say that near New York the crop is small, though from the increased number of growers there is plenty of fruit in market. Last winter was very hard on the plants, and our notions of hardiness have to be considerably modified. Wilson's Albany, which has heretofore been most reliable, does not, in New Jersey, give more than half a crop, and in some cases none at all. This season we shall know more about the merits of the newer varieties. In Southern New Jersey the "Agriculturist" has done splendidly, in other places not so well. We get the first report from the West from the Terre Haute, Ind., Express:—"Yesterday morning Mr. G. W. Shaffer of the Elmwood Nursery 'dumped' on our table several baskets of the finest strawberries ever placed on said table. The varieties embraced the great Triomphe de Gand, the Austin Shaker, excellent for table use, the plump-sweet Hooker, the prolific Wilson's Albany, and the much talked of Agriculturist. We saw nothing at the late exhibition that equalled the "Agriculturist." Among the Wilson's Albany was one berry that measured six inches in circumference. These berries were grown at the Elmwood Nursery of Messrs. Shaffer & Co., and exhibit rare culture."

Spattering Churns.—I. J. Powell, of Ontario Co., N. Y., stops the spattering of his wife's churn by passing the handle of the dasher through a block 5 inches long, with a hole through it a little larger than the handle; the block resting on the churn top. A leathern washer on the handle, made of a circular piece with a cut from the center outward, and the edges lapped so as to give the washer the shape of an inverted funnel, is often used, to good advantage.

The Growing Crops—What is their Condition and Prospects?—As a matter of general information, we solicit frequent and continued reliable information in regard to the condition and prospects of the staple grain, grass, and fruit crops in all parts of the country. Let every one writing a business letter, and a multitude of others who have nothing else to write about, send us brief but careful notes upon the crops, extending over as wide a section as possible, within their personal observation. We cannot publish many of such reports, but a multitude of them concentrated here will enable us to form a correct general estimate for the whole country, highly valuable to all our readers.

A Wee Swarm.—Mr. Bidwell, of Bidwell Brothers, writes: "Our little girl wishes me to send the following message: 'My wee, small swarm of bees, is little smaller than Master Judd's little hean's egg. It's only my two little hands full; and such beauties'—while papa's swarms are two big hats full!' I will add, that the day being windy, only a few came out, with a young queen. On the next morning the old queen swarmed with 8½ lbs. of bees, while the wee swarm only weighed with the little bush on which it lit a quarter of a pound!"

Subsoiling (To "J. B.") is of greater benefit upon thorough-drained land than on that not drained.

Architecture.—A new book of "Designs, etc., for Street fronts, Suburban Houses and Cottages, etc.," by M. F. Cummings, Trny, N. Y., and C. C. Miller, Toledo, O.—Just as we took up the book before us with the view of writing a notice of it, the following question from "W. S. W.," Kokomo, (State not given), was laid upon our table.—"Mons. Ed.: Where can carpenters get an 'Architect' (book on architecture) that will give the most extensive details, together with plans and elevations of both city and country buildings, etc. Please answer, giving price, etc."—Except that there are few or no plans, and these anybody can make, (no one is suited with ready-made plans), this, it strikes us, is just the work called for. The book is a folio, and consists of 52 elaborate plates, in which the designs are drawn rather small, and enlarged in detail on a scale ¾ inches to the foot. The details, etc., are both simple and elaborate, and in the enlarged portions every board and moulding may be directly seen and measured. It is published by the authors. For sale at the Office of the *American Agriculturist*, or sent post-paid for \$10.00.

The Little Corporal deserves promotion among the little folks. It has made a good year's campaign, "Fighting for the good, the true, and the beautiful," and now takes the field again with 35,000 troops to back it. Volunteers are still called for in our advertising columns, and good rations are promised to all who enlist.

Top-dressing Grass.—"You say in the March number of the *Agriculturist*: 'We do not believe in top-dressing with animal manures in the spring.' Please inform me, why you do not?" 1st. Practically; it has been demonstrated to our satisfaction that grass makes the best use of bulky manure in the late summer, or autumn. That there is no time when the crop will be so much affected by manure as just after one crop is removed, so much so that we advocate applying manure or compost directly upon the freshly mowed fields.—2nd. Theoretically.—The grass in the autumn and after cutting has no chance to mature seed, hence is strengthening its roots to bear the winter and produce seed in the spring. The manure comes in time to help it do this very well. The dry ground is open, and as the showers carry down the enrichment, it is quickly taken up. In the spring, the feeding roots are not very active until the leaves have pushed well, and the ground is full of moisture, and so does not take up the manure with such avidity; besides there is danger of washing rains. We approve entirely of liquid manure, or of soluble top-dressings like guano, unleached ashes, plaster, etc., applied in spring.

Plants Named.—G. Taylor, Hammonton. Apparently the Grape Hyacinth, escaped from cultivation. The plant was figured in October last. M. R. A. York Co., Me. *Geranium maculatum*, Cranesbill; and the one previously sent; *Aralia trifolia*, the Dwarf Ginseng, sometimes called Groundnut. M. Helme, Adrian, (no State). *Anemone nemorosa*, the Wind-flower; *Senecio aureus*, Golden Rag wort, or Squaw Weed; *Equisetum arvense*, often called Ground Pine; and a *Vicia*, too poor to make out. L. Lauber, Lane Co., Pa. The "little bell" is *Staphylea trifolia*, the Bladder-nut, figured in May, 1863; the other is *Viburnum Lentago*, Sweet Viburnum, and also called Nanny berry about New York. Jus. B. Hay, Watertown, C. W. *Atragene Americana*, a beautiful climber related to Clematis, and the Pearly Everlasting, *Antennaria margaritacea*. N. C. A. Hawley, Pa. *Trillium erythrocarpum*, the Painted Trillium. J. K. Kepner, Olmstead Co., Minn. The prostrate evergreen shrub is *Arctostaphylos Uva-ursi*, the Bear-berry, sometimes called Upland Cranberry.

Hollyhocks from Seed.—M. Irvine.—If seed from double flowers were planted, you may expect a good share of yours to be double. If any come single, pull them up as soon as they show their character, and save seed only from the best flowers.

Bone Dust in Pot Culture.—Mrs. M. Washington, D. C.—A very small quantity might be serviceable to roses and similar plants, but not enough should be added to produce active fermentation. There is always great danger in the use of manure upon delicate plants. Good earth with plenty of leaf mold and sand, is usually rich enough. If manure is used at all, let it be well decomposed, like that from an old hot-bed, and thoroughly mixed with the soil before potting.

"China Cabbage and Beans."—R. J. Thank you for your good intentions, but the seeds did not reach us.

Tan Bark for Strawberries.—C. Stick, Union Co., Ill. There was a notion sometime ago, that tan bark was a specific manure for strawberries on account of the tannic acid it contains. Now it is generally admitted that its chief, if not its only value, is its mechanical action as a mulch.

Potatoes Under Straw.—J. Hollocher, Manchester, Mo., will find this subject discussed in the *Agriculturist* for November, 1863. We cannot see any reason why they should not keep as well and be as wholesome as potatoes raised in any other way.

The Grape-vine Flea Beetle.—C. Brinton, Lancaster Co., Pa., sends us specimens of this little steel blue beetle, which is the *Halicta chalybea*, of the Entomologists. It is very destructive to the buds of the vine, and we have heard more of it this year than ever before. The insect is only about one-sixth of an inch in length, and appears very early in the season. They are easily shaken from the vines, may be caught on a sheet and destroyed. We know of no other remedy.

Grapes and Wine.—"The Cultivation of the Native Grape and Manufacture of American Wines. By George Husmann, of Hermann, Mo." The above is the title of a new work on the grape, published by Geo. E. & F. W. Woodward, New York; and written by a gentleman well known as a contributor to our horticultural journals, and as an extensive cultivator of the grape. The work is eminently practical and tells in plain language just how the author raises grapes and makes wine. There is a great deal of individuality about ev-

erything that Mr. H. writes, and this book is no exception; as to varieties, he claims to give only his experience in his own locality, and here he is very decided. What will make this work particularly acceptable is the treatise on wine making, in which the directions are full and clear. Probably the author will receive some adverse criticism for his advocacy of Gall's method, but this is a subject that has two sides, and we know of no one better able to defend himself than Mr. Husmann. For sale at this office and sent by mail at \$1.50.

Filling up around Trees.—H. O. Crane wishes to know if it will be likely to insure his trees to fill up around them nearly two feet. It will be very likely to damage them. It puts the roots too far from the surface.

A Batch of Tree Queries.—M. L. Carter, De Kalb Co., Ill. Quince stocks are more generally budded than grafted. Stone fruits may be grafted, but the wood is apt to gum, the plum less so than others. It is better to graft one year old stocks by whip-grafting, than those two years old by cleft-grafting, as a much more perfect union results. Whip-grafting may look difficult in the description (Jan. 1864), but it is perfectly easy in practice. Try it on a few twigs. Any blacksmith can make a scuffle hoe, if you show him the engraving. The other queries we are unable to answer.

What is the Matter with the Twig?—H. O. Crane, Brown Co., Wis., sends a twig from an apple tree which exhibits about the worst case of the bark scale we ever saw. It should have been attended to before the leaves appeared. A strong solution of soft soap or moderately strong ley, (1 lb. potash to 4 gallons of water,) applied thoroughly with a scrubbing brush, will remove them. Head back the tops if the small limbs are affected, and get a fresh growth.

Poppies for Bugs.—Mr. Julius Price, Whitehall (no State), sows poppy seed in the hill with his squash, and other seeds, and finds that the bugs do not trouble the vines. The poppy is usually so slow and uncertain about coming from seed, unless self sown, that we doubt it will be a very reliable remedy.

A Persevering Lily.—D. C. Martin, Dauphin Co., Pa., writes, that he filled up his yard 2½ feet with solid yellow clay, and that a Tiger Lily that was in the soil beneath forced its way to the surface, where it found a board a foot long and half as wide, which it lifted as it grew.

Birds and Cherries.—D. Yarrington, Luzerne Co., Pa., complains of the raids of armies of birds—which do not leave him a single early cherry. Scarecrows, cow-bells, and colored streamers have no terrors for them, and he pathetically asks: "Is there no help for this evil?" Probably the only sure way is to grow trees with low heads and cover them with netting.

A Mad Stone.—One of our correspondents wishes us to advertise a "mad stone," which we must decline doing, and advise him, if the stone is very mad, to send it to the nearest Lunatic Asylum. This is a revival of an old superstition that certain stones have the power to cure those bitten by rabid animals. We are surprised to find that any believe in it at the present day.

The Civil War in America, by Benson J. Lossing. We have received from the publishers the first volume of this work, a handsome book of over 600 pages, very copiously illustrated. The author is well known for his industry and accuracy in collecting historical materials, and he has brought together in the present work a picture gallery of persons and places identified with our great struggle, which is of great interest now, and will be of immense value in the future.

Sponge for Rats.—"Piper, of Hamlin, Jr.," sends us an old prescription for getting rid of rats and mice that may be new to some. He soaks bits of sponge in melted tallow, and when cold, places them where the vermin will find them. They eat, get the dyspepsia, and either die or go where they are not "sponged upon."

An Article on Trichinae.—A gentleman sends us a communication on this subject, but as he fails to say where he lives, we cannot reply by letter and take this method of informing him that no amount of argument can overthrow a fact. Our article was not published without its first being seen by the editors, and its statements are in accordance with later and more extensive investigations in this country and in Europe.

The Rinderpest, notwithstanding the great precautions taken, has broken out in Ireland. A

single case occurred in County Down, where immediately measures were taken to prevent its spread. This time there was no temporizing—no attempts at cure, no time taken to study the pathology, nor to get a diagnosis of the case, nor to allow veterinary surgeons nor homeopaths to try to cure or arrest the infection, but the pole-axe had everything its own way. The cow was killed, all that had been exposed were killed and buried, a cordon was placed around the farm, and all travel by cattle upon the roads was stopped, and all the cattle fairs were put off throughout that entire region. We can but confidently think there is hope for Ireland that these energetic measures will stay the plague.

Tobacco Worm Moths.—These large moths fly at night and suck honey from flowers which open towards evening, and are not visited by the bees. Such are especially the showy flowers of the common Evening Primrose (*Oenothera*), and the Stramonium, which indeed is open all day, but it is showy, and they find it easily at night. Poisoned honey may be placed in these flowers, and it will kill great numbers of the moths. Get the apothecary to rub a grain of strychnine in an ounce of honey, dilute it with about half its bulk of water and put a few drops in these or any flowers visited by these large night-flying moths. It is best to take flowers that will wither when the sun rises, or to pick the flowers, so as not to kill bees, when they come out.

Mississippi Crops.—"Subscriber" writes from Columbus, May 27: "Freedmen entered their new career with laudible industry, and in most cases have complied with contracts, giving very general satisfaction. Owing to unfavorable weather our hopes have very much decreased. Cotton has germinated badly. Excessive rains have hindered cultivation, and crops have suffered very much. The low lands have been drowned out. The corn crop is the poorest I have ever seen in this county. There was not a sufficiency planted for home use, many thinking it cheaper to raise cotton and buy corn; and the wheat crop is almost a total failure. It is too late to replant cotton; corn may yet be planted on the overflowed lands, and if the season is favorable, make something."

Sunburnt Bricks—Adobe.—Hawley Ross, writing from Quincy, Ill., says, in answer to a question in the February *Agriculturist*: "There was a Congregational Church built in Niles, Michigan, in 1846, of unburnt brick. As near as I can remember the size is about 40x80, walls about 20 feet high. I saw the bricks when they were building; they are 6 inches thick and 2 feet square with a good deal of straw mixed in the clay to hold them together, and then dried in the sun. The roof is shingle, put on the same as for a brick house; it is plastered with cement on the outside, and common plastering on the inside. The church has a steeple with one of the largest sized Western church bells. I attended meetings most of the time in this church for 15 years, but have not seen it for four or five years."

Adobe Houses.—"G., of Eden Gardens, Canada West, writes: "A neighbor of mine built a house of adobe twenty-two years ago, and up to last summer it had stood perfectly sound. The house was built one and half stories high, 18x36 feet, and covered with shingles. The walls were plastered on the outside with lime mortar and rough-casted with gravel. The proprietor, wishing to make some alterations in the building last summer, took down a portion of the walls and used the adobes again in the same building. The bricks were made 18x12 inches and 6 inches in thickness. There was one small spot in the wall near the base where the plaster had been knocked off; the adobe had suffered somewhat from the action of the weather. Latitude here 44½ Degrees."

Double Dashers in Churns.—John Bennet, of Ripley Co., Ind., says: "Tell your readers that it pays to put a double dasher in their churns. It saves half the trouble churning."—Perhaps it does.

Cranberries.—E. H. Webb, Wayne Co., Ind.—A piece of ground covered during the winter with water from surrounding slopes, dry in summer, and which cannot be drained, is not a promising place for cranberries. Drainage and command of water are considered essential. We have no confidence in the profitable culture of cranberries on upland.

Trouble with a Lemon Tree.—Mrs. Judge B., Butler, (no State). The little bug that "seems to have no life," is probably the cause of the trouble with your lemon tree. It is one of the scale insects, and is often very injurious to hard-wooded house plants. Strong soft soap suds, if applied with a stiff brush, will usually kill them, if they do not yield to the brush, rub the bark with a soft pine stick, or corn cob, to remove them.

Darkened Counsel.—"A" thinks that he does not profit much by reading agricultural articles as "Statements are made by the learned writers one week to be flatly contradicted the next." We judge from his quotations that he reads the reports of the Farmers' Club, which is great on flat contradiction. It cannot be expected that men from the sandy portions of Long Island and New Jersey should agree with those from Westchester Co., upon manuring strawberries, or anything else. Whether it be true that Isabella Grapes "will make a pig squeal," we cannot say. Those we had last year, from Crooked Lake and Doct. Underhill, were too good to waste in such experiments.

Poisoned Flour—Caution to Millers.—A whole community in Orange Co., N. Y., have been poisoned, some fatally and most of them seriously, by means of lead which was introduced into their flour through the almost criminal carelessness of a miller. The lead was used to fill cavities in an old mill stone, and in the process of grinding was of course rubbed to powder and mixed with the flour. In this way, some 300 persons have been subjected to more or less severe lead-poisoning. If other millers are in the habit of repairing their stones with lead, let them take warning. The lead in this case was so finely divided as to be invisible, and its presence was only suspected from the cases presenting the symptoms of lead-poisoning.

Transplanting Carrots.—"L. H. C." asks, if it will pay to transplant Carrots. Probably not, as a general thing; though in the small way in the garden, it may be well to fill wide gaps in this way. To succeed, it must be done when the plants are very small.

Which is Best?—Mr. Hayes writes: "I have no tame grass yet. Which is best for corn fodder; to plant in hills, take off the ears and cut the stalks in the usual way, or to plant thickly in drills and cut stalks and all?"—The latter usually, for most fodder.

Mullein Leaves to Drive Away Rats.—At the suggestion of a friend, the writer, with little faith in the measure, once tried laying Mullein leaves around the rat holes in his cellar, to drive the rats away. In a short time, the leaves were mainly gone. More were laid down, but were not taken away. The rats were gone. These are the facts in that case. Why the rats went, is not known, unless the leaves gave them pain or alarm.—Other like experiments will be easy, where Mullein grows.

Walks and Talks on the Farm.

No. 31.

A few days ago I received the following letter from our friend, John Johnston:

New Geneva, N. Y., May 17th, 1866.

Dear Sir.—"Draining on the brain" will never hurt farmers. They will gain grandly during the disease, and get fat after they get over it, that is, if it has continued long enough.—I believe if I had you here for an hour I would give you another brain complaint that would ultimately help to fatten you. True, I could write out the prescription, in a way, but I can tell you there is nothing like seeing to make people believe. I would meet you any morning at the depot for the early train, bring you over to breakfast on ham and eggs, give a dinner of the same; take you over for the 4 P. M. train, and if not satisfied with what you have seen, you can charge me your fare back."

I went, and, of course, had to pay both ways! I think it was Walter Scott who said he was never thrown into the company of any man, however illiterate, without learning something useful. And certainly he must be a dull scholar who can visit a farmer of over forty years' experience, without picking up information that can be turned to good account. I have visited John Johnston a great many times, and wish every young farmer in the country could enjoy the same privilege. He is so delightfully enthusiastic, believes so thoroughly in good farming, and has been so eminently successful, that a day spent in his company cannot fail to encourage any farmer to renewed efforts in improving his soil. "You must drain," he wrote to me when I commenced farming, "I never made any money till I began to underdrain." But it is not underdraining alone that is the cause of his

eminent success. When he bought his farm, "near Geneva," over forty years ago, there was a pile of manure in the yard that had lain there year after year till it was, as he said, "as black as my hat." The former owner regarded it as a nuisance, and a few months before young Johnston bought the farm, had given some darkies a cow on condition that they would draw out this manure. They drew out six loads, took the cow—and that was the last seen of them. Johnston drew out this manure, raised a good crop of wheat, and that gave him a start. He says, he has been asked a great many times to what he owes his success as a farmer, and he has replied that he could not tell, whether it was "dung or credit." It was probably neither. It was the man—his intelligence, industry, and good common sense. That heap of black mould was merely an instrument in his hands that he could turn to good account.

His first crop of wheat gave him "credit," and this also he used to advantage. He believed that good farming would pay, and it was this faith in a generous soil that made him willing to spend the money obtained from the first crop of wheat in enriching the land, and to avail himself of his credit. Had he lacked this faith—had he boarded every sixpence he could have ground out of the soil, who would have ever heard of John Johnston? He has been liberal with his crops and his animals, and has ever found them grateful. This is the real lesson which his life teaches.

On my return home, I got from the post office a book entitled "High Farming without Manure." I thought, when I first saw it, that it was probably an account of the Rev. Mr. Smith's experiment in raising wheat year after year on the same land without manure, in which he succeeded in raising heavy crops simply by good tillage. There are many examples of the same principle in this country with corn, on rich bottom land. Good, clean culture has given, for many years in succession, large crops of corn. It is well understood—or rather it ought to be well understood—that good tillage, or stirring the soil, decomposes the organic matter in these rich lands, and enables them to produce large crops without manure. But in reality the manure is in the soil, and, working the ground simply makes it available. The principle is true of all naturally good soils, upland and alluvial. It is a great truth, and those farmers are wise who recognize it, and keep the cultivators running.

But shall we depend on tillage alone? A man may be so placed that for a year or two he has nothing else to depend upon. He may have taken a "run down" farm, and cannot get manure. In this case he will cultivate a portion of his land in the best manner possible. He will kill the weeds, and make the soil clean and mellow, and if the soil is naturally good, and the season favorable, he will get a fair crop. But will he adopt this as a system? Not he. I will guarantee that any farmer who has energy and intelligence enough to work his land thoroughly, who will cultivate his corn, for instance, every week or ten days as long as he can get a horse through it; such a man, I say, will not stop here. He will make all the manure he can. And so on the other hand, if you find a man who takes special pains to make and apply manure, you will find that he also cultivates his land thoroughly. I have never known an exception.

As a general rule, there can be no such thing as "high farming without manure." Were such a thing profitably possible, our barn yards and premises would soon be reeking with decomposing matter, and noxious gases would pollute the air. We should lose one of the grand incentives to cleanliness, and nothing but the fear of some malignant disease would cause us to keep our premises sweet and clean. But now the very things which are most injurious to health, are the very things of most value in increasing the crops. Depend upon it, no discovery will be made whereby we can profitably dispense with manure.

"But you did not tell us what Mr. Johnston wanted to show you." I am coming to it. Mr. J. makes a great deal of manure, and what is better, he makes good manure. He feds a flock of sheep

every winter, giving them corn and oil cake, and in the spring, after he has sold his sheep, he throws the manure up into loose piles, and turns them once or twice till they are thoroughly rotted. This manure he spreads early in the fall on his grass land that he intends breaking up for corn in the spring. This is his usual practice. But a year ago last fall, when sowing his wheat, he put on a slight dressing of manure on two portions of the field that he thought were rather poor. The whole field was seeded down with Timothy in the fall at the time of sowing the wheat. No clover was sown. This spring those portions of the field dressed with manure are covered with a splendid crop of clover. You can see the exact line in both cases where the manure reached. It looks very curious. No clover seed was sown, and yet there is as fine a crop of clover as one could desire.

On looking into the matter more closely, we found that there was more or less clover all over the field, but where the manure was not used it could hardly be seen. The plants were small, and the Timothy hid them from view. But where the manure was used, these plants of clover had been stimulated in their growth till they covered the ground. The leaves were broad and vigorous, while in the other case they were small and almost dried up. This is doubtless the right explanation. The manure did not "bring in the clover"; it simply increased the growth of that already in the soil. It shows the value of manure for grass.

This is what Mr. Johnston wanted to show me. "I might have written and told you, but you would not have got a clear idea of the matter." This is true. One must see the great luxuriance of that piece of clover to fully appreciate the effect of the manure. Mr. J. said the manure on that grass was worth thirty dollars an acre—that is on the three crops of grass before the field is again plowed. I have no doubt that this is true, and that the future crops on the land will also be benefited—not directly from the manure perhaps, but from the clover roots in the soil. And if the field were pastured, the effect on future crops would be very decided.

I spend an hour or so on Mr. Sheldon's beautiful farm—looking at his splendid herd of Shorthorns. As I drove up I passed the finest field of young grass and clover I ever saw. I asked a man who was at work near it what Mr. Sheldon had put on the field that made the grass so big. "Nothing, as I know of," he said, "it's capital land." Is this high farming without manure? Not a bit of it. The field,—about twenty acres,—was manured heavily in the fall on the sod, and plowed up and planted to corn, receiving good culture. It was then sown with oats, followed by wheat, and seeded down with a peck of Timothy in the fall, and six quarts of clover in the spring. The wheat received a good dressing of manure. And those acquainted with Mr. Sheldon's mode of feeding, will know that the manure is not simply rotted straw. It is as rich as can be made from stall-fed cattle. This is the secret of the magnificent crop of grass. It will doubtless cut three tons to the acre, at least—and this fed out will give more manure, and so the land is kept continually improving. Good grass and clover are the bases of good farming.

What a pest red root is! You have heard me make that remark before! Well, if you suffered as much from it as I do, you would excuse me. You recollect where I had beans last year. No land could be cleaner. It was in wheat the year before when I took the farm, and was so full of couch-grass that I concluded not to seed it down, but to try my hand at killing the quack. After the wheat was off, I plowed the land and harrowed it, and just before winter set in I plowed it again. In the spring I run the cultivator through it, and harrowed; then plowed again, and harrowed, and cultivated again, and then harrowed and raked up the quack into heaps, and burnt it. I then planted it to beans, and kept them thoroughly cultivated and hoed. Last fall I sowed it to wheat. I do not think there is a root of quack left, but the red root came up by the million!

Now what I ought to have done is this: Instead

of sowing wheat, I should have sown rye, and manured it. Then this spring it could have been fed off with sheep, or cut for the milch cows, and the land then plowed and planted with corn or beans. Red root, it is said, only grows among winter wheat; but if you will prepare the land precisely as you would were you going to sow wheat, and then let it lie bare, or sow rye, the red root will be checked! It will germinate in the fall, and you can plow it up in the spring. Red root is easily destroyed. What renders it formidable is, the fact that it only germinates in autumn and gets into our winter wheat, where we have no chance of destroying it. If we prepare our land for wheat, and then sow rye instead, and eat this off or mow it in the spring, and then plow the land and plant beans, we should destroy large quantities of it—and as we could sow wheat after the beans, it is only delaying the wheat crop one year. The rye, if sown early and manured, would give us a great crop of succulent food early in the spring, and would be just what we need for milch cows, or for ewes and lambs. For the latter purpose, rye is frequently grown on light lands in England. Where lambs are raised early for the butcher, I do not see why it would not be very valuable. You think it would make the land too rich for beans. If so, give up the plan of sowing wheat the next fall, and plant corn instead of the beans; or, what is usually done in England, sow turnips or some other root crop. But I do not believe the manure would hurt the beans. I think it is a mistake that beans require such poor land. If well cultivated, they will mature quite as early on rich land as on poor, and give a far better crop. But they must be kept clean. My beans last year paid me better than any other crop I raised, and I have put in ten acres this season. If the price is low, it will still pay to raise them to feed to sheep and milch cows. No grain makes such rich manure, and nothing is better for milch cows than corn and bean meal mixed together. Then there is this advantage about beans, they need not be planted until you are through the hurry of spring work, and they are off in time to sow wheat in the fall, and as they are drilled in rows two and a half feet apart, the land can be cultivated with the horse-hoe and *can* be made as clean as if summer fallowed. I say *can* be, because this is seldom the case. Harvest work comes on, and the cultivators are thrown aside, and before you know it, the beans are full of weeds, and you lose one of the chief advantages of the crop. Then what a pleasant work it is to pull beans among thistles! I have known farmers "go into beans" with great enthusiasm, thinking to make their fortune, who soon gave them up in disgust simply because they neglected to keep them clean. I saw a crop last year that was completely smothered with weeds, and was not worth pulling.

Beans are an excellent crop, but must have clean culture. They should not be worked amongst while the dew is on, as it is said to rust the leaves, but otherwise you cannot cultivate them too frequently. "What do I suppose is the reason there is so much red root in the wheat after beans?" Simply because the land had been so frequently plowed and cultivated, that all the seed in the ground germinated. It was just what was needed to destroy the red root, provided it could have been plowed under this spring. As it is, it will trouble me for years to come. I believe it would have paid to have plowed up the wheat and sown it to barley. As the seed that was in the ground doubtless all germinated from the repeated plowing and harrowing it received, this would have rid me of the pest.

I have just been sawing wood with a machine and three horses and four men. I believe I could have got it saved cheaper by hand. That is not a "progressive" idea, but I am inclined to think it is a fact nevertheless. I know if you have everything just right you can do work cheaper with machinery than by hand, but the trouble is to get everything just right. If a man made a business of sawing wood, he could saw it cheaper with a good machine than by hand, because he could keep his machine in order. But when you have only a little wood to

saw, it takes half the time to get fairly started and everything working right. The saw perhaps is a little rusted, or it is not sharp, or is not set quite true; or if the saw perchance should be all right, something may be wrong with the horse-power. It is not set right, and the belt rubs or comes off, or there is a screw loose, or a little casting breaks—and you have to stop all hands and send a hundred miles for a new one. Those who depict so eloquently the pleasures of modern farming by machinery, draw more on their imagination than their experience. I have tried it, and while I do not despair, I am often discouraged. I have a machine with which I can, and do, turn the grindstone, cut fodder, thrash, grind the grain, drive the cider mill, saw wood in the log with a drag saw, or cord wood with a circular saw. This it will do, and do well, but oh, the care of keeping all these things in order and getting them to work well. I have a potato planter, that at one operation marks out the rows, cuts the potatoes, drops the sets, covers them up, and rolls the ground. Also one that drills twelve acres of corn and beans in a day, and does the work well. We have cultivators that leave very little to be done with hand-hoes. We have mowing machines and reapers that leave little to be desired in this direction. The tedding machine shakes out the hay as well as it can be done by hand and five times as fast, the wooden revolving rake pulls it into wind-rows, a pitching machine attached to the back end of a wagon will carry the hay on to the load, and a steel toothed sulky rake makes all clean. Then at the barn we unload with a horse fork, and the farmer can sit in the shade smoking the pipe of contentment as he witnesses the operation. Then we have a machine for milking cows, and another to work the butter, while, if you make cheese, the American vats and presses make the labor mere child's play, compared with the old Cheshire system. I have not tried these last named machines, but I have little doubt that they work as well as some of the others I have named. The grain binder, too, I have faith enough to believe will soon be attached to every reaper, and then with a steam plow and a good potato digger, won't farmers have an easy time? Not a bit of it. If these things would run themselves; if they never got out of repair; if they had no disposition to lie round loose, but would put themselves up, then indeed we should be "gentlemen of leisure." But this will never be. We can change our work, but we can never get rid of it. If we do not work with our muscles, we must with our brains. And the encouraging feature of this age of invention is not that these "labor saving machines" do the work so much cheaper, as that they change the character of the labor required in agriculture. They lessen back-breaking drudgery, and increase mental activity. A farmer who uses a good deal of machinery cannot be dull and stupid. It will make a man of him.

I expect great things from the young farmers of America. There is everything to encourage them: soil, climate, social position, political influence. The destiny of the country is in their hands. But they must not expect to live lives of ease and luxury. Brains rather than muscles will be required in the new condition of our agriculture. Machinery will stimulate mental activity, and encourage the growth of that rare grace, patience!

I look forward with much interest to the trial of implements at Auburn on the 10th of July. Great pains have been taken to secure reliable results. I think, however, from the Programme on Horse Powers, the only one I have seen, that too much importance is given to "effective force," as a test of merit. Of course, other things being equal, effective force—or ease of draught in accomplishing a given amount of work—should secure the award. But unless the "other things" are taken into consideration, we may get a decision that will be an injury to agriculture rather than a benefit. I can imagine a horse power that runs very easy, and which might take the prize, that would prove a nuisance on any ordinary farm. The one great defect of American agricultural machines is, their liability to breakage, and to get out of repair. No

matter how effective a machine may be when it is properly set and run by an experienced machinist, if from an inherent defect in the principle of its construction, or of workmanship, it is very liable to break when not set exactly true; or if its arrangements are complicated, so that ordinary farm men cannot run it. I should greatly prefer some less effective but simpler machine, that is strong enough to stand the abuse that it will be sure to meet with in ordinary farm practice. On a farm large enough to use a sweep power to advantage, an extra horse at a season when it is most used is of little consequence. In the winter season, for instance, in chaffing fodder, or grinding feed, or sawing wood, I would about as soon put on three horses as two, or five as four—that is if there is anything gained by it. I am not arguing in favor of keeping more horses than we need. I think this a great mistake. All I wish to show is, that an extra horse, during a leisure season, or at a time when all the men on the farm are employed in attending the machine, is nothing compared with the loss of time and annoyance caused by a machine that is forever getting out of order. In the hands of a careless man an ordinary watch, for his purposes, would prove more useful than a delicate chronometer.

How wretchedly poor most farmers keep their store hogs. Having more milk than my pigs would eat, I rode round to see if I could buy a few. I called on a dozen farmers or more, and did not see three that keep their hogs decently. In two or three cases the pens were filthy in the extreme. There is no excuse for it. If short of straw, the horse litter might be thrown into the pen. It would keep the pigs dry and comfortable, smother that horrible stench, and make a great quantity of rich manure. The pig is naturally the cleanest animal on the farm, why compel him to be the dirtiest?

"Breeding sows should not be kept too fat," is one of those popular notions, half true and half false, that leads to grave mismanagement and loss. Most of the sows I saw were ravenously hungry, and some of them appeared to have barely strength enough to walk, let alone suckling the little ones. Such treatment is cruel—and monstrously absurd. "Pigs are very scarce this spring," said one who asked me four dollars a piece for a litter five weeks old. "Mr. Blank, at the Corners, has six breeding sows, and only raised two pigs." I presume if he had twelve he would not have raised one. I bought one litter six weeks old, of a man who was overstocked, for \$2 a piece. Had they been fed as pigs should be, I would have given him \$4, and they would have been better worth it, for an animal starved when young never fully recovers.

High feeding and high farming must, as a general rule, go together. We cannot farm high without good manure, and we cannot get good manure without high feeding. This little French book of Prof. Ville advocates what he calls a new system of "high farming without manure." There is much in the book that is both new and true; "but what is true is not new, and what is new is not true." The Professor has been making some experiments on the Imperial farm at Vincennes, and found that by using nitrogen for wheat, phosphates for roots, and potash for leguminous plants, he could get large crops. This is not new. Mr. Lawes published the same thing sixteen years ago, as the result of his experiments, and thousands of farmers in England have acted upon it ever since. But will the use of these artificial manures enable us to dispense with ordinary manure, and will they pay? They are of great value when used in addition to manure; but, as a general rule, it is neither safe nor profitable to depend upon them alone. The real value of these experiments in France is their striking confirmation of Mr. Lawes' experiments in England. Ammonia for wheat, bones for turnips, and potash for clover, peas and beans. The practical difficulty is to get the former. It cannot be purchased except at a high figure, and in ordinary practice any system that will give us ammonia, will at the same time give us phosphates and potash. We get the whole in rich manure.

Gophers.—The Striped Gopher.

It would be a rather difficult task to describe all the animals which go by the name of Gopher. In March 1864, (p. 77), we published a description of the Pouched Gopher (fig. 2) which does much damage in many parts of the West, and is reputed hard to catch. If persistently followed up with the traps described in the April Number, (p. 138,) they would probably leave the farms. This animal is readily recognized by its very large cheek-pouches, short tail, big head, and peculiar claws, adapted for underground work. It is 9 to 10 inches or more in length to the tail, which is only about 2 inches long, and sparsely covered with short hairs. A family of them will do great damage to grain fields, and in laying in their winter stores. We are led to give this notice of the gopher, because a Wisconsin "critic," writes us about his gopher, as follows: "I find you have an erroneous idea of the gophers. They are not nearly as large as musk-rats, [we own here to a little not altogether unintentional exaggeration], but about the size of a weasel, and nearly of the same shape. One can carry about as much grain in its cheeks as a chipmunk, and they are similarly striped, except the lightest colored stripes are dotted with black dots. In heavy soils one or two pailfuls of water will drive them out of their holes; in sandy soil, it will take more. They do not like to have their holes disturbed, and in working my corn, I dig into and fill up their holes, and drive off most of them." The animal described by our friend, is the striped gopher, represented in fig. 1. The wiseacres have given it the pleasant little Latin name of *Spermophilus tridecem-lineatus*. This beautiful little animal is about the size of the common Red squirrel, the tail is somewhat bushy, and half the length of the body. The color is dark brown above, with light stripes, and lines of light spots alternating with each other. The fourteen species of this genus are characterized by their squirrel like bodies, well developed cheek pouches, and by burrowing.

The Duchess Family of Short-Horns.

We give upon our first page a fine portrait of the head of Mr. Thorne's "4th Duchess of Thorndale." The Duchess family was brought into notice by the late Thomas Bates, of Kirkleavington, Eng., he having bought a fine cow of Mr. Chas. Colling, in 1810, which

was called Duchess. She was called by Mr. Bates, "Duchess by Comet No. 1," and was produced by a remarkable course of in-and-in breeding, and gives the name to this most remarkable and valuable of all the tribes of Short-horns." After he became possessed of his first Duchess, he "never," as he says, "used any bull that had not Duchess blood." The first Duchess was an extraordinary butter maker, and of Duchess 34th, dam to the fa-

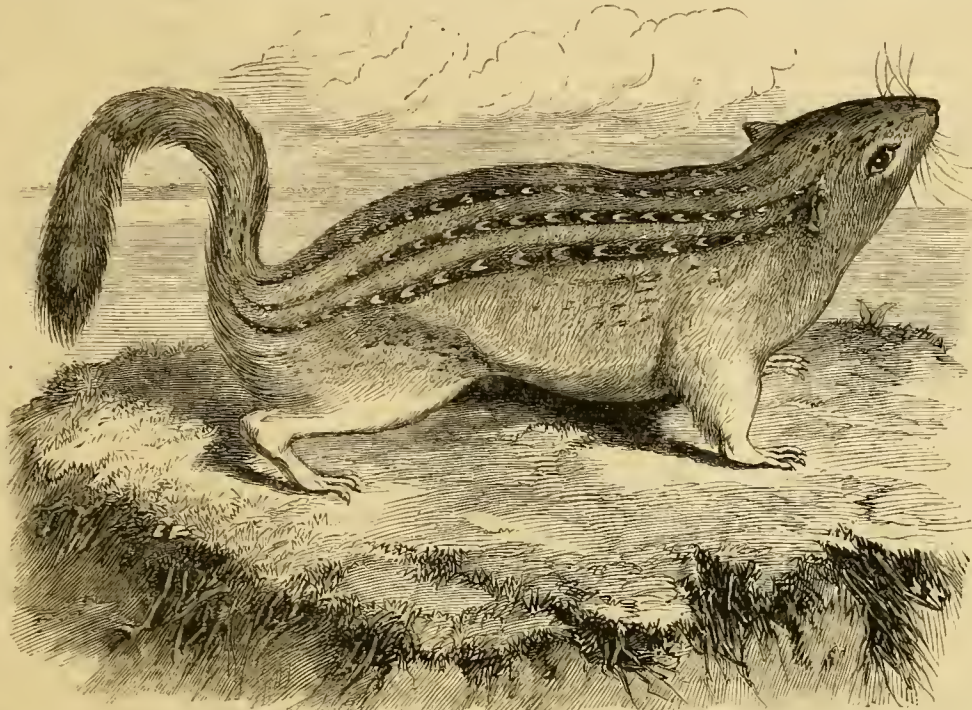


Fig. 1.—STRIPED GOPHER.—(*Spermophilus tridecem-lineatus*).— $\frac{2}{3}$ NATURAL SIZE.

mous bull Duke of Northumberland, Mr. Bates says, as a proof that Short-horns had improved under his care, that this cow "consumes one-third less food than my first Duchess (purchased in 1804), and her milk yields one-third more butter to each quart of milk. There is also a greater growth of carcass and an increased aptitude to fatten." We presume she did not give so much milk, or he would have mentioned it.

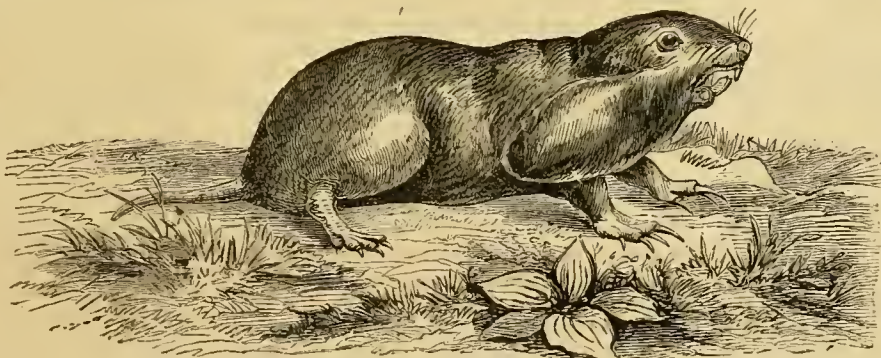


Fig. 2.—POUCHED GOPHER.—(*Geomys bursarius*).— $\frac{1}{2}$ NATURAL SIZE.

The Oxfords originated in the Matchem cow, with which Mr. B. took the first prize at Oxford, and were used by him to cross with the Duchesses, and they have been so bred in with them that now-a-days Oxfords and Duchesses mean pretty much the same thing, and in this tribe also the family name follows the dam. Our readers should remember that by the common consent of breeders no cattle are now named Duke or Duchess, except those of that family. Nor is the name Oxford used except for animals belonging to the family of that name.

The reputation of Mr. Bates' herd has been long established, and many fine animals from it

have been brought to this country, for some of which prices, considered in England enormous, were paid by our enterprising countrymen. Altogether, 15 head have been brought here, and 3 others purchased, died on the passage.*

In 1857, Mr. Samuel Thorne purchased of Morris & Becar, their entire herd, and as they had never sold a female of pure Bates blood, he obtained all the imported ones then living, and their female progeny. The cow "4th Duchess of Thorndale," is one of the best in the herd of Mr. Thorne, and is the mother of his famous bull, "6th Duke of Thorndale," an animal which has been repeatedly pronounced, by gentlemen familiar with the best herds of England, the best bull they ever saw. There has never been a public sale at Thorndale, but Mr. Thorne's private sales, 32 in number, all of Duchesses or Oxfords, and these mostly calves, and, with 7 exceptions, bulls, brought the sum total of \$45,650, or an average of \$1,427.50 each. Of these, 12 head were sold to English breeders and shipped thither in 1861 and 1862.

That the credit of this tribe of the combined Duchess and Oxford families has not lost strength, but rather gained among English breeders, notwithstanding their natural jealousies, is evinced by the most recent sales both public and private of this stock. At Mr. Hegan's sale which took place a year ago, at Dawpool, Eng., 17 of the descendants of Duchess 51st, brought £481 3s. each, as we usually

calculate, equal to \$2,405, which is by far the largest price ever brought, by a herd of Short-horns at public sale. The herd was small and very choice.

The heads of the Duchesses are quite peculiar, and are well represented in the engraving referred to. The whole poise of the head is peculiar; the dishing face, giving the marked prominence to the eyes and nose; the large, full eye; the clean jaws

and jowls, mark the family quite as distinctly as they do particular individuals.

* They were brought out in the following order:

- | | |
|--------------------------|--------------------------------------|
| 1 Cow, Oxford 5th, | } Imported by Lewis G. Morris, N. Y. |
| " Oxford 10th, | |
| " Oxford 13th, | |
| 4 2d Duke of Athol, | } " by N. J. Becar, N. Y. |
| 5 Duchess of Athol, | |
| 6 Duke of Athol, | } " by R. A. Alexander, Ky. |
| 7 Duchess 59th, | |
| 8 Duchess 64th, | } " by Jonathan Thorne, N. Y. |
| 9 Duchess 68th, | |
| 10 Grand Duke, | } " by Jonathan Thorne, N. Y. |
| 11 4th Duke of York, | |
| 12 Duke of Gloster, | } " by Cadwallader & Vail, N. Y. |
| 13 Duchess 66th, | |
| 14 Oxford 6th, | } " by Morris & Becar, N. Y. |
| 15 Oxford 11th, | |
| 16 2d Grand Duke, | } " by Samuel Thorne, N. Y. |
| 17 Duke of Dorset, | |
| 18 Grand Duke of Oxford, | } " by Jas. O. Sheldon, N. Y. |
| " Killed on the voyage. | |
| " Died on the passage. | |

What Constitutes Good Milk?

The quality of milk is a matter which concerns not only the consumer of the liquid as milk, but also those who make butter and cheese from it. Much has been said of late years concerning the reliability of the usual tests for the quality of milk, and the lactometer has been discarded by many as quite unreliable. Doct. Voelcker, chemist to the Royal Agricultural Society of England, has recently published, in the Popular Science Review, a paper upon "Milk and its Adulteration," in which he shows that for the purpose of detecting any amount of adulteration that would be profitable, the old method of testing is satisfactory. The article referred to comes from such high authority, and is withal so interesting, that we wish we were able to give it entire, but we must be content with making rather copious extracts.

"A variety of conditions affect materially the quantity and quality of milk. . . . Thus the season of the year and the amount and kind of food given to cows influence the yield and quality of their milk; again, the race or breed and size of the animal to a great extent affect the yield and quality of milk.

"Generally speaking, small races, or small individuals of the larger races, give the richest milk from the same kind of food. Where good quality is the main object, Alderneys or Guernseys unquestionably are the cows that ought to be kept, for they give a richer cream than any other kind in common use in this country; but of course Alderneys are not the most profitable stock for cow-keepers in towns, with whom the Yorkshire cow, essentially a short-horn, is the favorite breed, as it surpasses all others for the quantity of milk it yields. The milk, however, compared with that of the Alderney or Ayrshire cow, is more watery and less rich in butter, and therefore not well suited for dairies in which butter and cheese are made.

"In the spring of the year, and the early part of summer, milk is more abundant, and the butter made from it of a finer flavor. As the season advances, the supply diminishes, but becomes richer in butter. The influence of food on the quality of milk is very striking. A half-starved cow not only yields but little milk, but what it yields is miserably poor. On the other hand, the liberal supply of food, rich in nitrogenous and phosphatic elements of nutrition, tells directly on the milk.

"Nothing, therefore, can be more injudicious than to stint dairy cows in food.

"The finest flavored milk and butter, I need hardly say, are produced by cows fed in summer entirely on the grass of rich permanent pastures, and in winter on nothing else but hay made of fine short sweet grass. Eleven or twelve lbs. of grass produce about one lb. of milk, or a ton of good hay produces as nearly as possible one hundred gallons of milk. Few persons, however, having the opportunity of keeping cows for their own use, can afford to feed them in winter entirely upon hay. Turnips, mangolds, meal, brewer's grain, bran, or oil-cake, with more or less cut straw, in a great measure have to take the place of hay as a winter food.

"Turnips give a disagreeable taste to the milk, and moreover produce very watery milk.

"Mangolds are less objectionable, but should not be given to milch-cows without an allowance of three to five pounds of meal. Of all kinds of meal, none is equal in milk-producing qualities to bean-meal—a fact which finds a ready explanation in the circumstance that bean-meal

contains as much as twenty-eight per cent. of flesh-forming matters, or the same class of compounds to which the curd and albumen of milk belong, and that it is also rich in phosphates, or bone-earth. Pea-meal or Egyptian lentils closely resemble bean-meal in composition, and may be used with equal advantage as an auxiliary and excellent food for milch-cows. It is not a little remarkable that in leguminous seeds, which are always rich in flesh-forming matters, as well as in other articles of food, a large percentage of nitrogenous or flesh-forming compounds usually is associated with a large percentage of phosphates or bone-earth. There exists thus naturally an admirable provision in food, specially adapted for milch-cows, or young and growing stock, to supply the animal not only with the material of which the curd of milk, or the flesh of young stock consist, but likewise to supply bone materials, for which there is great demand when growing stock has to be maintained in a thriving state, or cows have to be kept in a condition in which they may be expected to yield much and good milk. Oil-cake produces much and rich milk, but seriously injures its quality by giving it a bad flavor.

"Bran, on the other hand, is a good food for milk. Indeed, nothing can be better as an auxiliary winter food for milch-cows than four pounds of bran made into a thin mash, to which should be added four lbs. of bean-meal. Along with this about twenty-five lbs. of mangolds, and about fifteen lbs. of hay, and fifteen of straw-chaff, should be given per day to each cow.

"Cows fed upon such a daily allowance of bran, bean-meal, mangolds, hay, and straw-chaff, during the winter months, yield much more milk of a superior flavor than cows fed upon turnips and most other kinds of auxiliary food.

"When brewers' grains can be obtained at a reasonable price, they will be found one of the cheapest and best foods that can be given to milch cows. Brewers' grains, I find, are much more nutritious than their appearance seems to warrant. Even in the wet condition in which grains are obtained from breweries, a condition in which they hold from 75 to 77 per cent. of water, they contain a good deal of ready made fat and flesh-forming matters. When air dry, brewers' grains, I have recently discovered, contain from 7 to 8 per cent. of oil and fatty matter, and in round numbers 15 per cent. of nitrogenous matters, and in this state are more nutritious and a more useful food for milch-cows than barley meal in the same state of dryness.

"During the last ten years I have made a great many milk-analyses, from which I select a few for the purpose of illustrating the natural variations which may occur in the composition of equally genuine milk. The results are embodied in the following table, showing the composition of four samples of genuine new milk obtained and analyzed by myself in the country.

Composition of 4 samples of new country milk.

	1	2	3	4
Water.	85.20	87.40	89.9	90.70
Fatty matter (pure butter) ..	4.06	3.43	1.99	1.79
Caseine (curd) and a little albumen..	3.4	3.12	2.94	2.81
Milk-sugar.....	5.0	5.12	4.4	4.01
Mineral matter (ash).....	1.13	.93	.64	.66
	100.00	100.00	100.00	100.00
Percentage of dry matters.	14.80	12.60	10.0	9.30

"The analyses of these four samples exhibit a wide range of variations, which I found in equally pure and genuine country milk. The first analysis represents the composition of a sample unusually rich in butter; number 2 shows the composition of milk of average good qualities; the third of poor, and the last of very

poor country milk. The richness of the first I ascribe to the extremely good pasture upon which the cows were fed at a season of the year when milk generally becomes richer in quality, but less in quantity—that is, in September and October, up to November. The last sample was also September milk produced on the Agricultural College farm, Cirencester. The cows were then out in grass, but the pasture was poor and overstocked, so that the daily growth of grass furnished hardly enough food to meet the daily waste to which the animal frame is subject, and was then not calculated to meet an extra demand of materials for the formation of curd and butter. The poverty of this milk thus was evidently due to an insufficient supply of food.

"It will be seen that the variations in the amount of curd and milk-sugar in good and watery milk are far less striking than those in the amount of butter. A very good judgment of the quality of milk may therefore be formed from the amount of butter which it yields on churning, or from the amount of cream which it throws up on standing. Instruments, adapted for measuring the quality of cream thrown up by different samples of milk, are called creamometers. These instruments are simply graduated glass-tubes, divided into 100 equal degrees, in which milk is poured up to the division marked 0, and is kept at rest for twelve hours. Although the creamometer does not furnish results which correctly represent the real amount of butter in different samples, it nevertheless affords a ready means of ascertaining whether milk is rich or unusually poor in butter, in other words, whether or not milk has been skimmed to a considerable extent. Good milk, of average quality, contains from 10½ to 11 per cent. of dry matter, and about 2½ per cent. of pure fat. It yields from 9 to 10 per cent. of cream. Naturally poor milk contains 90 or more per cent. of water, and less than 2 per cent. of pure fat, and yields only 6 to 8 per cent. of cream, or even less.

"Experiments on a large scale have shown me that the thickest cream does by no means give most butter, and that the cream which rises from different kinds of milk often varies greatly in composition. The indications of the creamometer, therefore, are fallible when samples of milk, produced under very different circumstances, have to be tested. Milk sent by rail is necessarily subject to a good deal of agitation, and throws up less cream than that which has been less disturbed.

"A great deal has been said and written about milk-adulteration. Sheep's brains, starch paste, chalk, and other white substances, which are said—on what authority nobody has ever decided—to have been found in milk, only exist in the imagination of credulous or half-informed scientific men. It is difficult to understand where all the sheep's brains should come from, and how they could be amalgamated with milk, nor is it at all likely that chalk, a substance insoluble in water, and not easily kept in suspension, should be employed for adulterating milk. As a matter of fact I may state that I have examined many hundreds of samples of milk, and never found any chalk, nor any adulterating material except an extra quantity of water, and that I never met as yet with a chemist who has found any of the clumsy adulterations which popular treatises on food describe as having been detected in London milk.

"The whole question of milk adulteration and means of detecting them, resolves itself into an inquiry into the character of good, bad, and watered or skimmed milk, and the mode of

recognizing these with expedition and precision.

"As the result of my own experience, founded on the examination of many samples of milk produced under the most varied circumstances, and purposely adulterated with known quantities of water, I may state that milk may be considered rich when it contains from 12 to 12½ per cent. of solid matters, 3 to 3½ per cent. of which are pure fatty substances. If it contains more than 12½ per cent. of solid matter, and in this 4 per cent. or more fat, it is of extra rich quality. Such milk throws up 11 to 12 per cent. of cream in bulk on standing 12 hours at 62° F., and has a specific gravity varying from 1.028 to 1.030.

"Good milk of fair average quality, as has been stated already, contains from 10½ to 11 per cent. of dry matter, and in this about 2½ per cent. of pure fat. It yields 9 to 10 per cent. of cream, and has a specific gravity of about 1.030.

"Poor milk contains 90 per cent. or more water, and has a lower specific gravity than 1.027. Such milk yields not over 6 to 8 per cent. cream.

"Skimmed milk throws up still less cream, has a bluer color, and is more transparent, and when undiluted with water has a slightly higher specific gravity than new milk.

"Good skimmed milk has a specific gravity of about 1.033; poor skimmed milk 1.028 to 1.030.

"Milk purposely watered yields only 5 to 6 per cent. of cream, and *invariably* has a lower specific gravity than 1.025.

"If milk is both skimmed and watered it yields less than 4 per cent. of cream, and possesses as low a specific gravity as 1.025 to 1.026.

"A great many experiments have led me to the conclusion that within certain limits the specific gravity is the most trustworthy indicator of quality, and that for all practical purposes an ordinary hydrometer float, by means of which the gravity of liquids can be ascertained with precision, and a graduated glass tube, divided into 100 equal degrees, constitute the safest and readiest means for ascertaining the quality of milk so far as it is affected by the relative proportions of the normal milk constituents.

"A set of such instruments or lactometers, one being a graduated glass tube for measuring the proportion of cream thrown up on standing, and the other a gravity float or hydrometer, with plain printed directions for use, can be obtained at the cost of a few shillings.

"A few years ago I made some accurate gravity determinations of pure milk before and after skimming, and of samples mixed purposely with 10 to 50 per cent. of water, and as the results may be useful in comparing them with others, I give them in the subjoined table:—

SPECIFIC GRAVITY OF WATERED MILK.

	Specific Gravity at 62° F. before Skimming.	Specific Gravity at 62° F. after Skimming.
Pure milk	1.0314	1.0337
" " + 10 per cent. water	1.0295	1.0308
" " + 20 " "	1.0257	1.0265
" " + 30 " "	1.0233	1.0248
" " + 40 " "	1.0190	1.0208
" " + 50 " "	1.0163	1.0175

Here follow analyses of milk from numerous localities in the richer and poorer districts of London, which show that the amount of cream bears a direct relation to the specific gravity of the milk. The author concludes from his researches that: "These facts afford a conclusive answer to the objection that no dependence can be placed on the gravity test. The fact is, cream, though lighter than skimmed milk, is denser than water, and any amount of water worth adding at all, can readily be detected in milk by the direct lowering of its normal specific gravity."

Perfecting Bees.

BY BIDWELL BROS., ST. PAUL, MINNESOTA.

A colony of bees in a natural condition consists of a queen or mother bee, many thousand workers, improperly termed "neuter bees," and during a yield of honey, several hundred, and at times thousands, of male bees, called drones. An examination shows the queen to be created for laying eggs, neuter bees for work, and drones for sires, and each for nothing else. All the workers, drones and future queens are bred from eggs laid by the queen. When we remove her from the hive, eggs cease, and on her return appear again. (That so-called fertile workers sometimes lay eggs is no exception, they are not workers proper, but imperfect queens.) On removing the queen, the following facts are ascertained: That those eggs in cells, in which workers are reared, all hatch in 3 days (as worms) and are then termed larvæ; they are fed honey and pollen and water, called jelly, for 6 days, during which they grow to be large white worms nearly the size of the cell. The cell is then sealed over by the bees, and subsequently the worm transformed into a perfect worker, emerges on the 11th or 12th day after sealing, or from 20 to 21 days after the egg is laid. If any drone eggs are in larger, or drone cells, they hatch in 3 days, are worms for 6½ days, and emerge as perfect insects on the 24th or 25th day from the time the egg is laid. If any queen eggs are in pendant cells, they hatch in 3 days, are 5 days in the larva state, and appear on the 16th day. They fly out to meet the drones usually on the 3rd day after leaving the cell, and if successful commence laying on the 2nd day thereafter, producing worker, drone and queen eggs, as either may be required. When a queen is removed, the worker bees, on ascertaining their loss, seek to replace her by enlarging a worker cell containing a worker egg or larva. These intended queen cells, if in the body of the comb, are altered by removing the worker cells adjoining the one selected, extending the base to increase the size, and are built out to clear the comb and hang down. If they are on the edge of the comb, they are built directly downward in the shape of a pea nut. The drone and worker cells are built horizontally, as observed in a piece of honey comb; the larger cells are those in which drones are reared, and the smaller or ordinary sized are those for workers. In the case of the drone and worker, they are fed water and honey, and pollen or farina, which is properly termed bee-bread, as it contains the principal elements that support all animal and insect life. The color of the food or jelly partakes of the color of the pollen; at times it is yellow, brown, or red, as that of the flowers from which it is gathered. To show that the pollen of flowers is similar to wheaten flour, we might state that early last spring, after our bees had eaten all their pollen stored, during a long and cold winter, 100 stocks consumed over two barrels of flour in brood raising, storing none, the stronger colonies necessarily using upwards of 10 lbs. each, which affected the color of the jelly—converting it to a whitish mixture.

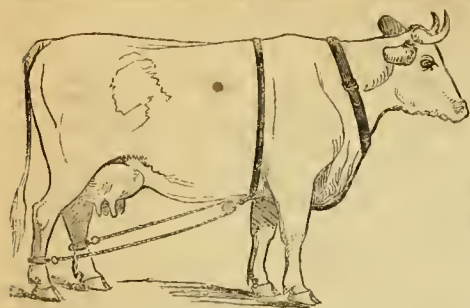
The food of the intended queen is ascertained by analysis to be "a bread containing an albuminous compound," secreted by the worker bees in the case of a natural queen, or compounded from the worker eggs for a forced queen. The drone and worker bees lose time, so to speak, in assimilating their coarser food, while the queen gains time in her development by being fed a concentrated easily assimilated compound. The

eggs in hatching require about summer heat from the nursing bees, which must be maintained throughout their maturing, or until their internal organization is established to produce it. For this reason, Italian bees can mature more brood in colder weather, the organization being more perfect, and better able to produce heat, and withstand cold, and consequently they swarm earlier. We have observed that the difference of a day in the maturity of the drones, or of the workers may be caused by the difference in temperature. When the heat of the days is 76° F. or above, the shorter time is made.

It is not then the size, nor the shape of the cells—for small and imperfect drones, and small and imperfect queens (called fertile workers), are reared in small or worker cells,—nor is it the food, nor yet the oxygen of the air severally, which develops life, but all acting in harmony. The ample cell, the quantity of nutriment and oxygen, produces a fullness, and the quality, a perfectness of development. The identity of the character of the parent and offspring is shown to be dependent upon the continuation of certain influences acting harmoniously on the principle of life; hence, like produces like only under similar circumstances. In raising over 300 Italian queens from one last summer, we observed that during a continued spell of scarcity of honey, and hence of food, the queens were more deficient in vitality, and in protracted cloudy weather less bright in color, but where a superabundant harvest and extreme fair weather prevailed, the highest degree of excellence was attained, convincing us fully that natural queens were far superior to forced or unnatural ones. The influence of food in providing an uninterrupted supply of honey producing flowers in summer, will give an increased development to the reproductive powers of the queen, and quiet industry to the workers; and avoiding the climatic extremes of heat in summer, which wastes and exhausts the system, and cold in winter, which tends to barrenness, will add health and strength to the bees, effecting more or less uniform changes, producing definite characteristics, and marking them ultimately as a distinct and perfected race.

Get Out of Old Ruts.

The consumption of barley is increasing year by year, as the Teutonic element in our population increases in number and wealth, and impresses more or less upon the American people the liking for the mild brewed beverages of Germany. The sale to brewers is in fact so ready, that the raising of barley as food for animals is hardly considered. We learn that oats in several extended sections of the country are, for some undetermined cause, beginning to fail to produce what were considered good crops but a few years ago. This is particularly the case in some of the river counties in this State, and it would, perhaps, be profitable to drop oats and try barley, which will probably do well upon the same soils. Clops are also recognized as very profitable, and like tobacco and other purely commercial crops, (those never consumed, but always sold), it may be cultivated so as to bring real advantage to the farm. It almost necessitates clean culture, and gives the farmer means to buy manure, do draining, etc. This following in old ruts of practice is one of the worst things a farmer can do, and an experiment with a new crop now and then is often the straight road to fortune. It should always be done after careful thought and investigation.



Kicking, Jumping, and Running Cattle.

Horses, cows and other cattle may be perfectly controlled from kicking and jumping by the arrangement which we figure. A description is sent to the *Agriculturist* by Wait M. Myers, of Oneida Co., N. Y., who has found it a sure remedy for the eccentricities named. We figure it as applied to a cow, but the same arrangement may be put upon a horse; and it interferes with no desirable motion. A stout strap $1\frac{1}{2}$ inches wide goes around the neck, and is connected by a still stronger one, 2 inches or more in width, to a small pulley under the brisket, through which a rope is rove, each end of which is made fast to fetters, or to hobble-straps above the fetlock. A girth strap simply holds up the pulley. "When the animal stands square on her feet," says Mr. M., "the rope must be pulled taut; and when all is right, she can walk or trot as well as ever, but she cannot kick with one foot, nor with both, nor can she jump over a fence three feet high to save her life."

It is obvious also, that an animal in this harness cannot run, for both hind feet cannot be moved backward at the same time. This contrivance is not new, but has long been used for breaking colts and controlling their action. Such things, however, except in cases of inveterate and obstinate kickers, or runners, do more harm than good. If a colt can be influenced by kindness and so broken, he makes a much better horse than one controlled by main force. This affair will not prevent that kind of kicking which knocks over the milk-pail, but only that most disagreeable and dangerous kicking back and sideways which some cows do.

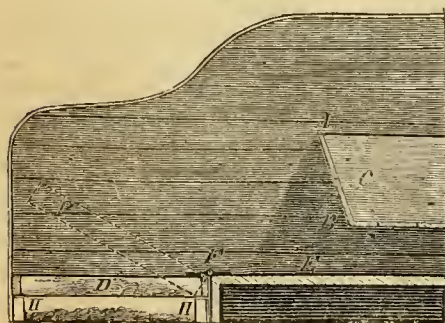


Fig. 1.—SECTION LENGTHWISE THE STALL

Plan for Horse Stall.

Mr. A. W. Darrow, a Maine farmer, sends to the *Agriculturist* the following, which he has in use, and recommends from his experience:

"I enclose a sketch of a horse stall, which I have used in my stable for the last six months. The plan is original with me. It is not patented, and I hope the public will not appreciate it less on that account. [The following references to the diagrams will enable the plan to be readily understood, especially if the reader will apply a scale of one-quarter of an inch to the foot.—A, B, C, feed box; D, grate; E,

platform; F, hinges attaching grate frame to platform; H H, grate supports; K, frame in which the grate bars are set; M, M, sides of stall; N, head of stall; O, end-bars of grate immovably attached to K, K, and forming part of the grate frame; P, position of grate when elevated to remove the droppings.] The grate has 2-inch bars and 2-inch spans, and the bars are 6 inches deep, and 6 inches space is between them and the floor. The droppings go through the grate, leaving it dry and clean. I have had hardly a stain to remove from my horse since using it, and no litter has been used. The bars being but two inches apart are as easy to the hoof as a plain floor. The droppings may be drawn from beneath by a hoe or scraper, or the grate may be raised, as indicated in Fig. 1. I keep muck under the grate, and think I can better save both liquid and solid manure than

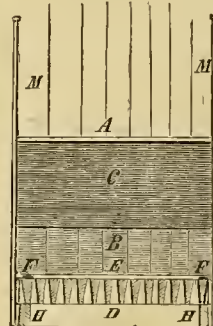
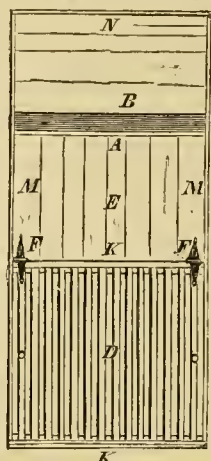


Fig. 2. SEEN FROM ABOVE. Fig. 3. CROSS SECTION.

by bedding in the common way. It requires several days for the droppings to fill up the space beneath the grate. Hence the muck may be well saturated before removal."

Chicken Medicine.

It is very distressing to see our farm yard dependents suffering under any form of disease, and much more so when we see one after another droop and pine and die, while we are powerless to alleviate or remove the malady. In regard to the larger animals we can, in a measure, compare their symptoms with our own when we are sick. We have the pulse, the secretions and excretions, the warmth, moisture or dryness of the skin, the breathing, and the various modes the terrestrial mammals have for showing acute suffering or dull disorder. With birds, however, the case is very different—they droop, hide themselves in dark corners, or in the bushes, go through to us meaningless and rather funny motions, walk sideways, twitch their heads one side, fall off their perches, grow lean, swell up about the eyes or head, gape, sneeze, take cramps—and so on—and as a general rule, no body can tell either the seat or nature of the disorder, any more than what will cure it. The importance of the poultry interest, and the daily increasing value of the stock in this country, leads us to call especial attention to this subject, so that poultry fanciers and breeders may compare notes and learn something about the diseases of poultry and their treatment. Whoever will contribute to our stock of knowledge, will place both editors and readers under obligations to him. Let the behavior of the fowls and all the symptoms be closely watched, as well as the effects of the treatment; observe also the character of the soil, if wet, dry, clay or gravelly, and

other surroundings. The disease described by a lady of Cambridge, Mass., in the following letter—for want of a better name we may call

VERTIGO.—"Being a great lover of a poultry yard, and having for many years kept hens, I have been troubled and grieved on seeing some of my best layers sicken and die, without being able to save them. Last summer, finding a hen that was perfectly well the day before, walking round and round, her head twitching, heart beating violently, skin hot, I thought I would try a new remedy, viz.: paregoric, of which I took a teaspoonful, a half teaspoonful of sulphur, half teaspoonful of Indian meal, and about four teaspoonfuls of water. I then put her in a basket of hay. Three times a day I gave her a little paregoric and water. The sulphur operated on the bowels, and the hen was well in a few days. In November, I had two hens taken in the same way, their heads twitching, hot, and drawn nearly over the back, I doctored them in the same way, and they got perfectly well."

THE PIP.—Mr. D. S. Kimball, Jr., of Bergen Co., N. J., writes concerning this and other ailments:—"I have cured a great many chickens of the pip in the following way: The pip being caused by a small dark swelling on the tongue near the roots, and sometimes on the roots, I take a knife and remove the swelling, and rub on a little butter mixed with ground black pepper. I give them no greasy food, and keep those attacked entirely away from all the others, as I regard the disease very contagious."

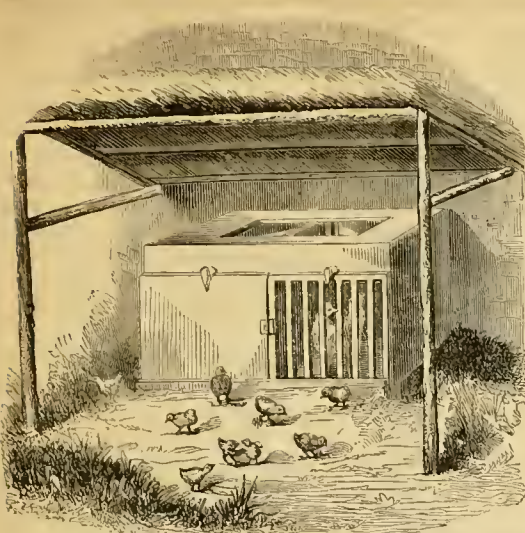
"Lameness of fowls without any apparent cause, is often occasioned by the caking of the oil sack. This is shown by a hard crust on the top. In such a case, wash the upper part of the rump with warm water and castile soap. In case of

"Loss of feathers, give fowls no warm food at all until they commence to cover again with down, and be very careful in their feed until recovered."

"HEN LICE.—Seeing Kerosene recommended for the prevention of lice in fowls, I would say that the oil is good if sufficiently pure, but as it is not pure in one case out of fifty, it is often very injurious. I have found that the only preventives not injurious, and all that is needed to raise and keep fowls both clean and healthy are, first, and most important, have the hennery both light, clean, and warm. Do not overstock with roosters, as it tends to keep all weakly and liable to disease. Give them plenty of good, sharp, clean gravel, warm food (not too warm), with a little animal food mixed with it occasionally, at all times fresh pure water, and lastly give them clean sassafras poles for their roosts."

Charles Embrey, of Washington Co., Md., writes on the same subject:—"During the last summer my poultry and poultry-house seemed to swarm with vermin (hen lice); I lost several sitting hens in consequence. I tried as remedies, whitewash, sprinkling of lime, smoke, etc., to little or no purpose, and concluded to try brimstone. I got a stick or roll of about half a pound, drove the fowls out of the house, burned the brimstone, smoking the premises well. The experiment proved a success, I have had no trouble with vermin since; all seemed to disappear both from the fowls and the house."

STIMULANTS have often a very good effect on fowls. Cayenne pepper and pepper corns, both are valuable mixed with their food, but ale and other malt liquor, or spirits, even undiluted, administered upon stale bread, have often a wonderfully good effect upon dumpish torpid birds, and upon those with colds, etc. Ale is best; and may be given alone in severe cases.



Coop for Hen and Chickens.

We give herewith, a very pretty design for a hen-coop, which, though a little late for the principal broods, will nevertheless, serve for a hint at least, if not a model for those who, having summer broods, would be likely to subject them to great discomfort, did they place them in the common close coops. The design is to have a box without a bottom, provided with a slatted and movable front as exhibited, and to have the whole covered by a movable roof of thatch, or any other convenient and cheap material. The roof affords shade and protection from the weather, and being placed against the south side of a wall, makes their quarters exceedingly comfortable, if not luxurious. For ourselves, we prefer a coop with a slanting roof, and with a slat door of one or two slats, that may be raised and lowered, instead of being obliged to raise or lower the whole front. The thatched shed, however, is particularly picturesque, and useful for protection in all weathers.

Ring-bone.

This distressing disease in horses is caused by over-exertion in pulling heavy loads, especially in up-hill work. It is, besides, hereditary in some



Fig. 1.—HEALTHY BONES.

cases, like spavin, which it very much resembles, and occurs sometimes without obvious cause. When ring-bone is established, it consists of a bony enlargement with or without anchylosis of the fetlock, or pastern, and coffin bones and joints, just as spavin is an osseous growth upon or union of the bones of the hock. It commonly occurs upon horses subjected to heavy draught, while spavin often comes in consequence of fast work, leaping, etc. The commencement of the disease is in an inflammation of the periosteum and investing ligaments of the joint, which is communicated to the bones and produces disorganization to some extent, and a deposit

of bony matter which gradually increases in size, and is always liable to grow larger and more painful, though it often

remains stationary for years, and does not unfit the horse for some kinds of labor. After the bony enlargement has actually taken place, there is no cure; but counter-irritants, blisters, etc., sometimes relieve the pain and the lameness it causes for a time. The only time when a cure can be effected, is before the disease becomes fixed, while yet it is only an inflammation of the joint. This will be indicated by tenderness, pain, heat, etc., and cooling appliances, such as cold water, soap and camphor, with a little landanum, etc., may be used, giving entire rest, with green food or roots. Follow this by some convenient preparation of iodine, like an ointment of iodide of lead and lard, or an ointment of biniodide of mercury—either of which may be had of any good apothecary. Rub in the ointment well, and follow up the

treatment for several weeks, not working the animal. In case there is a considerable swelling, though not yet firm bone, it is worth while to try blistering with cerate of cantharides, continuing at intervals the use of the iodine, the object of which is to promote the absorption of the swelling. Or a treatment may be followed similar to that suggested for spavin in the March number of the *Agriculturist*, page 94.

The engravings which we present, show, in



Fig. 2.—RING-BONE. from each side around outside the great flexor tendon, forming a ring through which it passed. Ring-bone usually manifests itself by a hard swelling upon the top of the joint, but the osseous tumor may appear most prominent on any of the affected parts.

Musk-rat Traps.

Whoever has undertaken to maintain the tide-water embankments described in the present volume of the *Agriculturist*, pages 57 and 92, for shutting out the sea from meadows, or whoever for any purpose keeps up dams or embankments, must have been greatly annoyed by that most persevering, industrious and shy animal, the musk-rat. He is considered very hard to



Fig. 1.—MUSK-RAT TRAP.

trap, as he cunningly avoids any thing suspicious, and, except in the winter, will not touch bait of any kind, unless very rarely. The holes and works of the musk-rat are the chief obstacle the tide-water farmer has to contend with, who attempts to shut out the sea and reclaim for cultivation what are known as salt meadows.

P. M. Griswold, of New Haven Co., Conn., writes: "The best trap for musk-rats that I know of, and one that is used quite extensively here, is thus made: A box is made 8 x 10 inches in the clear, and 3 feet long (fig. 1); two gates are

made to fit it as shown in fig. 2. The holes for the gates are placed 1 inch from the top and 2 inches from the end. Each gate is made in the following manner: take a piece of hard wood 1 inch square, long enough to cut a shoulder on each end, and let them play easily in the holes in the box. Then take



Fig. 2.

wire $\frac{1}{4}$ inch diameter, cut it in pieces two inches longer than the box is deep, and insert these in the hard wood piece, as shown; then weave fine wire across them 2 inches from the bottom, to keep from spreading, and when the gates are ready, put the box together. The gates hanging so that any animal going in will lift them, and when in, they will drop and secure him a prisoner. When done, place the trap in the water where musk-rats live. The water must be deep enough to cover the box 6 inches or more. Put a stone upon it to keep it down; drive stakes each way from the box at each end, to keep the rats from going past, and to lead them towards it; set a board up across upon each end of the box to keep them from climbing over, and they will dive and swim into the trap, and will soon drown. I caught three at a time in a trap like this."

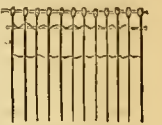


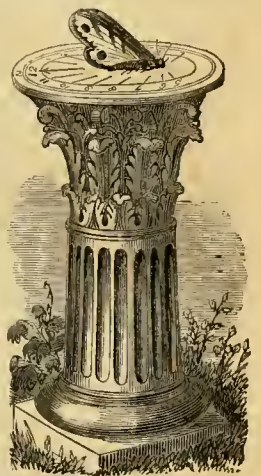
Fig. 2.

We find that our friend F., whose trout ponds we described some months since, uses similar traps. They are made of sheet iron, the gates being a little different, as shown in fig. 3. In summer they are set as above described, without bait, but in winter they are baited with parsnips and sunk through the ice or in open places in deeper water, with cords attached with which to lower them and haul them up.

The Sun Dial—Use and Ornament.

Good watches and clocks are common nowadays, and there is no longer the use for sun dials and noon marks, which existed only a few years ago. Nevertheless, on farms a few miles from villages and town clocks, how often does it happen that the time is lost except as we depend upon the sun for it? At such times a sun dial is a real convenience, if it be large enough to give tolerably accurate time. Sun dials are always interesting, and may be made ornamental, and are certainly very appropriate

ornaments to private or public grounds. In those of the ordinary form the gnomon or style which casts the shadow, is a right angle triangle, set with the long side up, to make the shadow. This long side should point directly toward the north pole. So that the north star, provided it could cast a visible shadow, (and indicated the exact north,) would cast none. To do this, the angle of elevation must be the same as



the latitude of the place, and it must be set pointing due north. A correspondent sends us a pasteboard model, of a sun dial with a butterfly for the gnomon, or style which casts the shadow, as a sample of the pretty and fanci-

ful devices which may be used. He describes also the manner in which he made his gnomon of iron, and taking a piece of marble for the dial plate, and a short iron column, which was the body of a stove, for the standard, constructed a sun dial which, with a little paint, was made quite ornamental. For a simple noon mark, one of the best gnomons is a flag pole, not very high, set so that the shadow will fall at noon exactly in the middle of a walk, upon a row of small white stones, perhaps. Any such pole or tall staff offers another means of telling when it is noon, namely, by the *shortness* of the shadow, for it is shortest when the sun is highest, and he is highest when he passes the meridian—which is noon.

Turnips—Kinds and Culture.

Like peas, turnips can not endure the heat of our summers. They survive, but do not do well, the crops being corky and light, they are therefore sown late in the season, so that the roots shall fill out and mature in the cool weather of the autumn. Those sown early for the table, so that they may mature sufficiently for use before July, do well also. The usual time for sowing turnips for the main crop is after the last of July, and before the middle of August. Those sown very late, that is, after the first week in August, should not be risked on any but warm, light, and rich ground, not over moist. In some of the elevated counties of Central New York, where the land is heavy and hard, turnips must be sown as early as the middle of June or first of July, to make a crop, but such locations are the exception.

The soil for turnips should be mellow and well enriched, but not with rank manure. It is best if the soil is deep, but deep plowing for the crop, without previous deep culture, is not the thing. However, any good 4-inch soil, not choked with weeds, will give fair returns. The best flavored turnips for the table are produced on light, sandy loams in good heart, but in which the manure has disappeared from sight.

For field culture, when the crop is to be marketed for table use, the Golden-ball, Snow-ball, and Purple-top Strap-leaved, are among the very best, yielding well and being excellent for the table, and good keepers, the seeds may be had of most seedsmen, as they are old standard varieties. One pound of seed to the acre is the rule, but much less will do if the drill be properly set, or if it be mixed with sand or earth, so that the whole field may be evenly sown broadcast. It is best to sow in drills, 20 inches apart, and to thin with the hoe to the breadth of the hoe blade apart. Thus the ground may be kept clean, and while a much better crop is gained, the soil has most of the benefits of a summer fallow.

Ruta-bagas, or Swedish turnips may be sown as late as the first week in July, and upon land in good tilth, give good crops. If the soil is shallow, turn the furrows together in pairs, and sow on the top of the ridges, covering the seed a little deeper than if sown on the flat. Wet land may be treated in the same way. The *ruta-baga* needs a richer soil than is necessary for the English turnips, and has a much heavier, firmer, and more nutritious flesh. Late sown crops are smaller, for the roots do not get so large, as they must be harvested before they get their growth, nevertheless, they are better for the table, and find a readier market than if very large. The chief value of both these crops, however, is for affording succulent fodder for

stock during the winter. The turnips being consumed in the autumn and early winter, and the *ruta-bagas* toward spring. The best kinds of *ruta-bagas* to sow are, perhaps, Skirving's Purple-top, a yellow fleshed variety, and the Purple-top White, which has white flesh. Sow in drills like turnips, 20 to 24 inches apart, and thin to 10 inches apart early in the season, but later let them stand a little closer.

For our own use, we prefer *ruta-bagas* to turnips for every purpose, and would sow them upon all land that we can get in order in time, but they require so long a season that it is rarely possible to use them as a second crop, even in the garden. The turnips, therefore, have to be used generally after or among other crops, to follow and take possession of the soil. *Ruta-bagas* may be drilled in between the rows of onions and take possession, when they are harvested in August or September, but even for this, turnips are better. Turnips may be sown among corn, and the seed hoed in at the last hoeing, they follow early potatoes well, and do well after winter grain. They ought seldom to be allowed to occupy land upon which late cabbages would grow profitably, unless the labor which cabbages would require prevent their cultivation, for we know no crop which, on soil adapted to it, will produce more food.

Raise Your Own Clover Seed.

"Raise your own clover seed and sow it with an unsparing hand," like nearly all agricultural precepts, needs qualification. On a wheat farm it is not easy to grow too much clover, provided it is all consumed on the farm, or plowed in as a green manure; but it is quite easy to raise too much clover seed. Clover is, perhaps, all things considered, the best *renovating* crop that can be grown on a wheat farm. Like peas and beans, clover is a leguminous plant, and draws a considerable quantity of ammonia from the atmosphere, while its deep roots penetrate the subsoil and bring up potash and other ingredients of plant-food. It is admirably adapted to our climate, and as yet "clover sickness," which is so troublesome on the light soils of England, is known in but few localities in this country.

Whether it is best for farmers to raise their own seed is a question which deserves consideration. We have urged them to do so because we think they will be more likely to *sow* more if they have plenty of seed of their own, than if they have to purchase. But it should be borne in mind that the main object of sowing so much clover is to enrich the land, and it is undoubtedly true that letting clover go to seed changes it from a *renovating* to an *exhausting* crop.

John Johnston, in a letter now before us, says he has frequently sold from \$700 to \$1000 worth and over of clover seed, in a year. He thinks it one of the most profitable crops a farmer can grow, but he adds, "I have known a crop of clover seed exhaust the land more than a crop of wheat." The conclusion is this: Clover is a great *renovating* crop when grown for hay, for pasture, or for plowing under, and should consequently be sown liberally. On the other hand, raising seed is highly profitable, but somewhat exhausting to the land. Raise clover seed, but use the money obtained from its sale to enrich the land. A bushel of clover seed will usually buy six or eight bushels of peas or beans, and these fed to stock on the farm will restore to the soil, in the form of manure, six or eight times as much plant-food as the crop of clover seed removed. Do not try to cheat the soil. Do

not induce it to give you a good crop of clover seed, and then refuse it a share in the profits.

In raising clover seed, cut the first crop early—say in this latitude, the first or second week of June. It is also important that the first crop should be mown as *evenly* as possible that the plants may start equally, and the future crop of seed ripen all at the same time. It is desirable to get the seed early, say the first or second week in September. Occasionally a large crop will ripen in October; but at that season the weather is usually unpropitious, and a large number of the heads when ripe are apt to drop off in wet weather, both before and after they are cut. A large growth of foliage is sometimes obtained by sowing gypsum on the clover after the hay crop is removed, but in a cool, growing season, the seed in this case is apt to ripen poorly.

The largest crops are obtained, other things being equal, from land seeded with nothing but clover—and in this case the seed should be sown pretty thickly, say six or eight quarts per acre. This thick seeding has a double advantage: You get a finer quality of clover hay, and the plants being thick on the ground the crop is not so apt to lodge, and can be mown more evenly. Six bushels per acre is sometimes grown on good land when clover alone is sown, but three or four bushels is a full average. The expense of growing, harvesting, and hulling is very little, and the seed is practically nearly all profit.

Let not the farmer who neglects and starves his land think that he can get rich by growing clover seed. The profits are not for him. There is no better indication of good land and good treatment than luxuriant crops of clover. The land that will produce good clover will produce good wheat or other grain—and the negligent farmer deserves neither one nor the other. Let him give the soil good tillage and liberal treatment, and it will prove grateful, but if he starves the soil the soil will starve him.

Cows Long in Stripping.

To the Editors of the American Agriculturist.

Doubtless the fault is more with the milker than with the cows—they will learn bad habits, but usually need to be taught them. If they are properly milked—so as not to give them discomfort—they seem to enjoy the operation, and usually part with their milk freely.

I keep ten cows, and always do the milking; raised them all, besides some that have been sold—have bought but one in ten years, and got cheated in the operation—and have never had a kicking cow, a "stripping" cow, or a cow with sore teats. Now let me prescribe for Mr. B. Always milk with clean hands; and if your hands are hard and rough, keep a cup of grease—goose or hen's oil, lard or fresh butter is good—at the stable, and once a day, before milking, rub a little on the inside of your hands—just enough to make them feel smooth. Some of this will adhere to the teats and prevent sores and cracks, and all together will make smooth work. Rough hands are a "nuisance" to a cow's teat, and will prove a nuisance to the milker, in "long stripping." At the time of milking, take a small pail, which is the most convenient, with a little water in it, and a sponge about two-thirds as large as your fist, or a woolen rag will answer, and the first thing to be done after sitting down to the cow, is to wash the bag after this manner, squeeze the sponge a little so that the water will not drip from it, and rub the bag all over, teats and all—keeping the milk pail out of the way, of course; this will insure

cleanliness, is grateful to the cow, and will promote the flow of milk. Now begin to milk, not with a short, quick, jerking motion, which is very unpleasant to the cow, and helps to form the habit, but with a steady, and with sufficient pressure of the teats, with a slight downward pull, to expel *all the milk every time*; don't let half of the milk that you have drawn into the teats fly back into the bag, but force it *all* into the pail. Milk the teats you first start with clean, or as long as the milk will flow from both; but if they do not milk even, leave the unfinished one and milk the other two; then go back to the first, and finally milk the unfinished ones together. Never milk with one hand, but manipulate the bag with both hands, even if you do not get milk with but one hand. Strip the bag perfectly clean. During the process of milking, and when the bag is partly emptied and becomes somewhat pliable, let the hands work well up on to or against the bag, this will keep up the flow of milk until the bag is emptied, and "stripping" will not be a "nuisance." Milk fast, but not in such manner as to cause uneasiness to the cow; if you do, you will teach her the habit, and you will have to "strip." A fair milker should be milked clean in five minutes, if she gives a good mess of milk. A steady, even motion, *filling the teat with milk at every pressure of the hands*, is the most rapid way of milking, and the most agreeable to the cow. Treat your cow with perfect kindness, speak to her as you would to a child, and when milking let that be the only business on hand. Try the above and see how it works. I practice what I preach. J. L. R., Jefferson County, N. Y.

Pasture Grasses for the Southern States.

One great cause of the running down of Southern lands has been the want of suitable grasses for both hay and pasturage. Now that the system of husbandry will be in a great measure modified from that of former years, the question, what are suitable grasses, will become a still more important one. We give a brief account and figures of two that are now attracting attention as valuable pasture grasses.

THE BERMUDA GRASS.—(*Cynodon Dactylon*.)—Our first acquaintance with this grass was made in Texas. After traveling all day over a prairie on which the verdure was browned in a September sun, we stopped at a planter's ranch and found his front yard clothed with its turf, the freshness of which was in marked contrast with the scorched aspect of other plants. Since then we have seen it in other Southern States, regarded as a weed to be avoided rather than as a plant to be cultivated. There

is no doubt that it has a value as a pasture grass, in the South, and though it would be of little use where better grass will grow, it has a tenacity of life that enables it to endure hot summers,

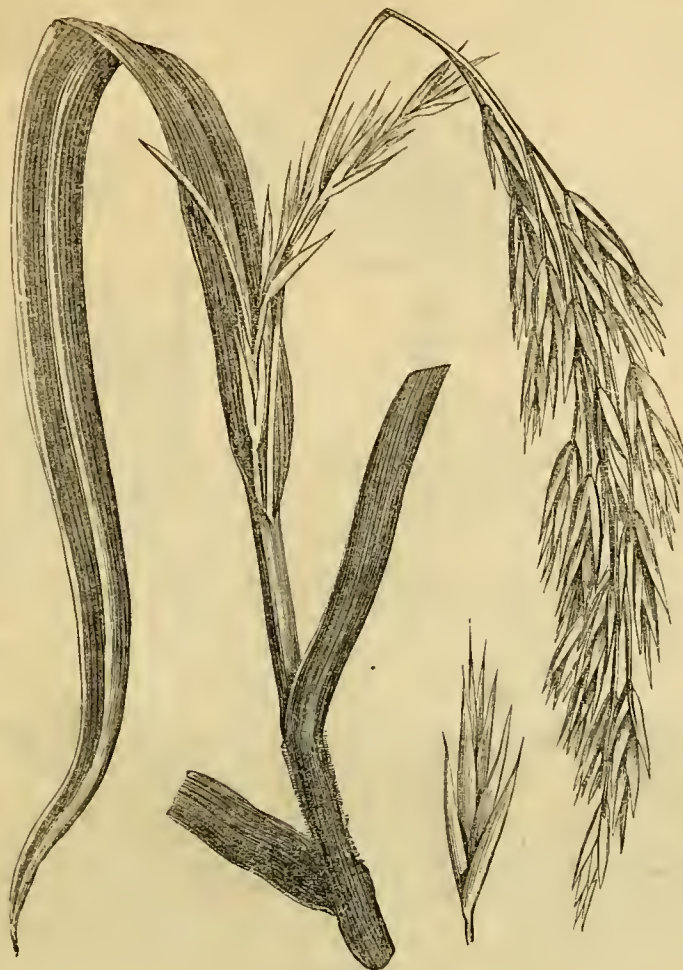


Fig. 1. SCHRADER'S BROMUS.

and to flourish in sterile soils—qualities that also render it, when uncontrolled, a troublesome intruder. To answer several letters, we give a figure and description of it. The most striking thing about Bermuda grass, is its strong stems or runners, which extend upon or just below the surface in every direction, and are often four

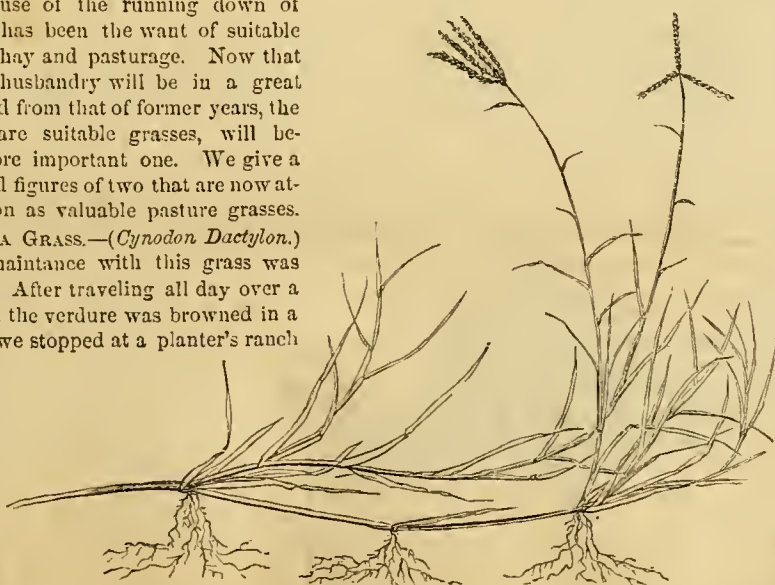


Fig. 2.—BERMUDA GRASS.

or five feet long. At intervals of about two inches, this stem throws down roots, and sends

up stems which bear the foliage and flowers. These upright stems are slender, and the leaves are narrow and delicate, but they are produced in such abundance as to make a dense turf.

The small flowers are produced in spikes which radiate from the top of the stem. In its manner of flowering, it resembles the common Finger, or Crab-grass, though the flowers of the two differ very much in structure; but this is a point only of interest to botanists. In its strong prostrate stem, and the readiness with which each joint will become a plant, this grass bears a strong resemblance to Couch-grass (*Triticum repens*), and these are qualities which at once adapt it to form a turf with great rapidity, and also render it very difficult to exterminate when it is once established. The seed is not down in our catalogues, and it is doubtful if it produces seed as a general thing. Plants that are so abundantly provided with other means for multiplying themselves are usually shy about seed bearing. As every joint of the prostrate stem will make a plant, cuttings of it are used to form a pasture or lawn. The plant may be chopped up and the pieces scattered broadcast, and then rolled, or sets made by dividing a plant may be put in hills.

It is sufficiently hardy in most Southern localities to give grazing during the winter, and though it will grow where more valuable grasses will not, it flourishes much better on fertile soils, where it even becomes large enough to cut for making into hay. It should be carefully kept from spreading into

cultivated fields, as it is difficult to extirpate.

SCHRADER'S BROMUS.—*Bromus Schraderi*. (?)—This grass is the *Brome de Schrade* of the French, and the agricultural journals of that people seem to be as wild over it as if they had found a new Chinese yam. We notice that they have dropped the name of "Rescue," under which it went a few years ago, and now designate it as *Brome de Schrade*. Just what this grass is, we will not attempt to determine until we have grown some specimens, but we have suspicions regarding its botanical character. If it is the old Rescue grass, the name first given it in Europe, it is unworthy of consideration, but if, as is now claimed, it is what was formerly called *Ceratochloa breviaristata*, from the N. W. coast, it may possess value and be worthy of trial. In France, it is stated that its excellence as a pasture grass, its productiveness, its endurance of cold, and its everything wonderful, will completely revolutionize their agriculture. But they are great on revolutions in France, and we content ourselves with calling the attention of Southern agriculturists to these statements, and suggest that this grass is, if half the foreign talk be true, worthy of trial by them. It must be borne in mind, however, that none of the species of *Bromus*, have, as yet, been favorably decided upon by a jury of intelligent cows, and if this one should be found to their taste, it will be an exception. Of course, cattle *will* eat the different species of *Bromus*, but they do not afford a very nutritious food, and they prefer other when it can be had. Both figures are given of about half the natural size,



THE EMIGRANT SHIP IN NEW-YORK HARBOR. — Drawn by Granville Perkins for the American Agriculturist.

One of the most interesting sights in the world, and one of especial concern to American farmers, is that of which we present the above beautiful engraving. The picture was taken at our request by one of our favorite marine artists, and presents a scene which may be witnessed almost every day in the year from the wharves or from the Battery, or from any point giving a view of the upper harbor of New York. A large sailing ship has arrived crowded with its living freight of emigrants all anxious to place their feet upon the shore of their adopted country. The bay is very beautiful, with its green shores enlivened by the country seats of the wealthy, and sprinkled with a score of villages with church spires showing on every hand above the tree tops; it is interesting from numerous fortifications, whose great guns command every part of the channel for miles before reaching the city, and it is always enlivened by the foreign shipping, coasting crafts and the hundreds of passenger steamers, and tug-boats. No one is ever disappointed with the first view of the new world who enters at this port. So the immigrants are usually cheerful and happy.

At the present time when a ship arrives it is boarded by health officers some twelve miles below the city, and if any contagious disease is

found, the ship with its passengers is detained in quarantine; otherwise it comes directly up to its anchorage near the city. The emigrants were formerly the prey of keepers of boarding-houses and all kinds of villains. Now no one is allowed to communicate with them, except perhaps relations of known respectable character.

The Commissioners of Emigration are officers of the State of New York. They occupy Castle Garden, an old round casemated fort, situated on one side of "The Battery," a park, at the southern extremity of the city. It is covered by an immense tent-shaped roof. The emigrants are brought here with their baggage, upon a barge, or the small steamer, which is seen in the picture, and after being registered, they are furnished transportation tickets, at the lowest prices, to any part of the country to which they wish to go; their money is exchanged at Wall-street rates as reported hourly, and they have opportunity to buy bread, milk, and other simple food. Here too, before any are allowed to go out or to see anybody from outside the building, they are addressed in their own language, and told the dangers they run in the city, and by the way, from all sorts of bad persons. Those who are sick, moneyless, or detained from any cause, are

taken care of; the rest are forwarded as rapidly as possible to whichever point they wish to go. It is chiefly those of intolerable stupidity who are very badly victimized after leaving Castle Garden. Sometimes great numbers arrive in a single day, as for instance on Monday, May 28, the arrivals were 4,500, which indeed was the largest number that ever came in in one day.

Last year about 200,031 arrived in all; 129,021 being from British, and 67,000 from German ports. The destination of these people was as follows: To the Eastern States, 13,511; Middle States, 129,141; Southern States, 3,419; Western States, 51,054; Pacific States, Mexico and South America, 1,000, and to the British Provinces, 1,534. The influx at the present time is much larger; so far this year more than double that of the same months last year; 40,300 came in May.

These strong muscles and willing hearts are greatly needed to subdue our soil and to carry on our improvements in agriculture, road and railroad building, etc., etc., and these people, in the hard laborious life which they lead, are making for themselves and for their children homes and a country. Let Americans, native or naturalized, so meet them with fairness and honorable conduct, that they will soon become intelligent, respectable and worthy citizens.

Our Native Violets.

We have growing wild in the Northern States, some seventeen species of Violet, and it is very seldom that we see one of them in cultivation. Perhaps their general lack of fragrance has something to do with this neglect. We are so accustomed to associate the delightful odor of the European species with the name of Violet, that there is a feeling of disappointment when we find ours scentless. Still we have several species which are really pretty, and would no doubt repay the trouble of any one who should endeavor to improve them by careful cultivation and selection. Some of them show a disposition to sport in color, in the wild state, and it is not rare to find white flowered specimens of several of our blue flowered species. The Bird-foot Violet (*Viola pedata*), is our showiest wild species, and quite handsome enough to merit a place in the garden. It has delicately cut, clean foliage, and very large flowers, which stand up well above the leaves, and have a fine lilac purple color. Occasionally a remarkable natural sport is found, in which the two upper petals are of a deep rich purple, and of the velvety texture of the Pansy. We are indebted to Mr. W. W. Denslow, of this city, for the specimen from which our engraving is taken. This was found upon the upper end of Manhattan Island, and some years ago we had a similar one from near Baltimore. On one of the flowers, the side petals were partially marked with the same dark color, and no doubt cultivation would develop flowers which would be velvety throughout. Mr. D. also finds a white variety. This species, which is a quite hardy perennial, grows naturally in poor soils, and when transferred to the garden should have a light sandy spot, where there is a partial shade.

Slugs and Snails.

Slugs and snails are so much alike, as far as the animal is concerned, that the snail may be considered as a slug with a shell, and a slug as a snail without a shell, or one so small, rudimentary, and hidden



Fig. 1.—SLUG.

from sight, that it usually escapes notice. Both animals move in a slimy track by means of their contractile foot; both have four tentacles or "horns," capable of extension and retraction, in front of the head, and both produce their young from eggs.—Slugs are a great pest to the European gardener, and sometimes to us. Being unprotected by a shell, their slimy bodies are unable to endure a dry atmosphere, and the intense heat of our summers prevents their increasing here as they do in Europe. Still, in spring they are often destructive to lettuce and early cabbages, and in a moist autumn, we have seen late cabbages completely riddled by them. They are also more or less destructive to young and tender plants generally. The slug belongs to the genus *Limax*, of which there are several species. Our most common one is only about an inch long, but we have seen, rarely, a species 4 or 5 inches in length, and as large as one's little finger, which

is probably the European *Limax cinereus*. During a dry time they hide in the earth, but when there is the proper amount of moisture present, they come out to feed. In some parts of France, where slugs are troublesome, ducks are kept for the purpose of destroying them. These birds are said to be so fond of slugs that they will

common land snails, and is easily seen when on the plants. They are readily picked off by hand. Both this and a larger species are eaten in some parts of Europe, where they are considered not only as a valuable food for invalids, but they are also highly prized as a delicacy.



BIRD-FOOT VIOLET, (Variety.)

touch no other food while any are to be found. Slugs may be readily trapped by laying lettuce or cabbage leaves upon the ground. If these be taken up early in the morning great numbers of slugs may be captured and fed to poultry. Lime-water, tar-water, and diluted gas liquor, are all said to be efficacious in destroying them.

Snails are less troublesome with us than are slugs. We have never known any of our many native snails to do any appreciable injury, but the European horticulturist finds several species that he counts among his enemies. One of the European snails has long been known in Maine and Massachusetts, where it was early introduced, and we were interested last year at discovering it on Long Island, where it seemed completely naturalized in the vineyard of a friend. The increase of this animal in our or-

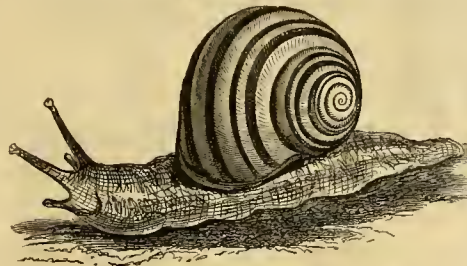


Fig. 2.—SNAIL.

chards and gardens is not to be desired, and we give a figure that will allow it to be recognized. This is what has been called *Helix hortensis*, but we believe that naturalists now consider it a variety of *Helix nemoralis*. It is much brighter and more handsomely marked than any of our

Insects and Plant Fertilization.

SECOND ARTICLE.

The Iris flower, illustrated in our former article upon this subject, (see May *Agriculturist*, p. 186,) is only a striking and well marked case of what occurs in hundreds of other blossoms. Admirable as the adaptation here is for fertilization by insect aid, and plain as it is, when once pointed out, that the Iris could hardly ever seed at all unless visited by bees or such like insects, yet this has never been anywhere noticed in print before, that we know of. If this is the case with such a common flower, we may be sure that there is yet very much to be learned about the relations of flowers to insects, and of insects to flowers. Many other flowers, however, have long been known to botanists as requiring the aid of insects, and as evidently *intended to be so aided*. But the question which abruptly closed our former article, still presents itself and demands an answer. *Viz.*: Why should insects be called in to do that which, by a little different arrangement, would be done by the flower itself, and which is done by many hermaphrodite flowers? And can we believe that a hermaphrodite flower like the Iris, was ingeniously constructed in this fashion in order that the pollen, however near by, should not fall upon the stigma of itself, and then that, by an equally ingenious arrangement, a bee or butterfly should be enticed to the flower, and made to do the work of carrying the pollen from the anther to the stigma?

The solving of this enigma has been left to our times, and is one of the capital hits of that sagacious investigator, Mr. Charles Darwin. The key to the solution of the riddle he found in the principle, recognized by breeders, that close breeding tends to sterility and debility, while cross-breeding among different individuals of the same species obviates this tendency. If breeding in-and-in has this tendency,—and it is pretty well understood that it has, in the animal kingdom and in the human race, and moreover, we could show upon general grounds that it is what ought to be expected—then cross-breeding or wide-breeding (as we may term it) must be essential, in the long run, to the perpetuation of any species. Now, this fertilization of a blossom by its own pollen is the closest kind of breeding in-and-in. And in contemplating this, Mr. Darwin was led to infer that even hermaphrodite blossoms should not be fertilized by their own pollen, at least for generation after generation. Those that were so would be weaker and less productive after a while, and if so would certainly die out at length, unless artificially protected, to make room for the stronger races.

This neatly explains the whole thing. Wide-breeding, i. e., crossing between different individuals of the same species, is obviously provided for in the many cases where the male and female blossoms are on different plants, and al-

most as well where they are on different branches of the same plant, the action of wind and of insects being considered. And it now becomes evident that hermaphrodite blossoms enjoy a similar advantage. In our *Iris* and *Aristolochia*, at least, it is now clear enough that it is not intended that the pollen shall reach the stigma which lies so close to it, and that is the reason why the anther and the stigma of *Iris* face away from each other: but the pollen is intended to be applied to some other stigma of the same species; and that is the reason of this curious arrangement of the parts, and why an insect is called in to do the work. A bee can not take the honey from an *Iris* flower without carrying off on its rough head some pollen from the anther it must rub against. It can not well take the honey from the next flower of the sort it flies to without depositing some of this pollen on that stigma as it seeks its feeding place.

The Dutchman's Pipe never set any fruit in our garden for 25 years, except once, and then only a single pod, evidently because it does not get the needful help; for in its native haunts in the mountains of Virginia and Carolina, it seeds freely. There some small insect, probably a coleopterous bug, that can enter the narrow orifice, doubtless visits it, attracted by the odor, and feeds on the scanty secretion at the very bottom of the flower. It can hardly fail to crawl over one of the anthers on its way out, and get its legs or chest powdered with pollen. Some of this pollen may be left on the stigma of the same flower, but is more likely to be deposited on the stigma of the next flower the insect enters. We hope to show that this provision for cross-breeding, which is so very complete in these two cases, and in several others we have yet to mention, is not confined to certain extraordinary instances, but is so common in some way or other, that it must be regarded as the rule among flowers.

A. G.

Something About Budding.

Were the horticultural department of the *Agriculturist* made up solely for accomplished gardeners, we should devote it mainly to recording the progress of horticulture. But as it is for the people at large, to whom as a general thing, the simplest operations of the gardener are mysteries, we are often obliged to go back to first principles, and treat of things which, to some readers, are as simple as A B C. Our correspondence is a fair index of the wants of our readers, and as we have now several letters asking us to say something about budding, we give such directions as will enable any one to perform the operation.

Budding consists in removing a bud from one tree and planting it, so to speak, in the stem of another. The things required are: buds; stocks, as the tree to be budded is called; a knife; and some tying material.

Buds.—Look at a shoot which has grown this year, upon any fruit tree. When it ceases to grow in length, it commences to form buds, which are to be developed and continue the growth next year. There will be a *terminal* bud at the end of the shoot, and others along the side, at the base of each leaf, called *axillary* buds. These last are the kind used in budding, and there will be a difference in these. Those nearest the end of the shoot will be the largest, while those farthest down will be very small and sometimes hardly perceptible. The shoots are cut when the buds are well formed, the time varying with the kind, and somewhat with the

season, just below the last plump bud. If the buds on the upper end of the shoot appear un-

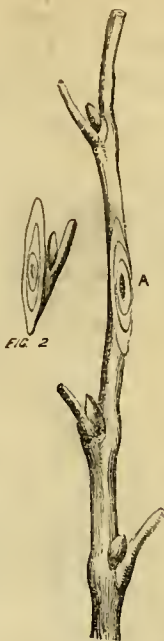


Fig. 1.

ripened, cut them off; then cut away the leaves, but let the leaf stalk remain, and we then have what nursery men call a "stick of buds," (fig. 1) which may be used at once, or kept from drying in damp moss, or other material, and be preserved a week or two in a cool place.

Stocks.—Budding is usually performed on young stocks. Peaches are worked the first year from the seed. Pear, apple, and other stocks are grown one year from the seed, taken up and heeled-in for the winter, and set out in the spring in nursery rows, and are usually ready to bud the following summer or autumn.

Knife.—Any sharp thin bladed knife will answer, where there is but little budding to be done, but for continuous work, as in nurseries where buds are put in by thousands, a proper budding knife is used, the form of which depends much upon the fancy of the operator. Sharp and round pointed knives are made for the purpose, with a thin piece of ivory or bone at the end of the handle for lifting the bark. Some rapid operators lift the bark with the knife blade.

Tying Material.—Bass bark or matting is the best material, though in absence of this, woolen yarn, cotton wicking, or even a narrow strip of cotton cloth may serve as a substitute.

Time for Budding.—Stocks can only be budded while they are growing, and the bark "runs" or parts easily from the wood. Plums usually stop growing the soonest and are the first to be budded. The season for budding extends from July, with the plum, to September, with the peach, the time for each variety being modified by the season and location. When the buds are well ripened and the bark lifts easily is the proper time.

Operating.—Remove a bud (fig. 2) from the stick by cutting from below, inserting the knife about three quarters of an inch below the bud, and coming out half an inch above, taking as little wood as possible. The bud is usually held between the lips while an incision is made in the stock. Select a smooth place on the north side of the stock, as near the ground as possible, especially if budding on the quince or other dwarfing stock. Make a cross cut quite through the bark down to the wood, and then a longitudinal one extending from this down, as shown in fig. 3. Lift the corners of the cut portion without wounding the bark, and insert the bud, holding it by means of the leaf stalk, A portion of the bark of the bud will project above the horizontal cut, this must be cut off even with the cross cut, so that the bark of the bud and that of the stock will fit nicely together, as in figure 4. The bud is now to be securely tied: commence winding below the bud and bind securely to exclude air and rain,



Fig. 2.

finishing the winding above the bud, as in fig. 5. In a fortnight, if the buds appear plump and sound, the union has taken place; if they have shrivelled, the operation may be repeated, if not too late in the season. In about a month the tying may be removed, but the buds should be looked to before this, and if from the growth of the stock, the string is so tight as to cut into the bark, it must be loosened. Some propagators always remove the portion of wood beneath the bud, while others leave it in. Where it parts readily from the bud, it may be removed, but where it adheres firmly, it is best to leave it in, as there is great risk of injuring the bud in trying to remove it. Mr. H. Unger, of Logansport, Ind., who was formerly engaged in the nursery business, sends us a form of budding knife which he found so satisfactory, that he wishes others to have the benefit of it:

"Take a wide bladed budding knife, and grind a bevel on the point three-fourths of an inch long; this prepares the knife for the operation. Now, make your cross cut on the stalk so as to flare the bark out a little, place the knife as shown in the engraving, fig. 6, bear on sufficiently hard to cut through the bark, make a quick right and left motion with the upper or heel of the bevel, keeping the point fixed. This makes the perpendicular cut and opens the bark at once so that the bud can be inserted and shoved down to its place without any difficulty.

This mode does away with all devices for opening the bark, all of which are more or less calculated, in their use, to rupture the tender inner surface of the incision, a thing that should always be avoided, as it militates against the sure and speedy union of bud and stock. I will venture to say that a smart man with some one to tie the buds for him, can set at least three thousand buds per day by using the above described knife."

Fig. 3. A drawing of a budding knife with a long, thin blade and a handle.

Fig. 4. A drawing of a bud inserted into a stock, with the bark of the bud and stock meeting at a horizontal cut.

Fig. 5. A drawing of a bud inserted into a stock, with the bark of the bud and stock meeting at a horizontal cut.

Jerusalem Artichoke.—(*Helianthus tuberosus*.)

Every one recollects the "Artichoke," which as a boy he used to dig out of the old garden, and which, as boys will eat everything that will yield to their teeth, he used to crunch and consider good. This old plant, which is occasionally seen, has now turned up in France, as something wonderful, and the journals are as enthusiastic over it as only Frenchmen can be. This is nothing like the true Artichoke, which is a thistle-like flower, the leafy scales of which are eaten. The Jerusalem Artichoke is a species of Sunflower, which bears tubers somewhat like a small long potato. These tubers are eaten when cooked, and as a salad, and from their resemblance in flavor to the Artichoke, they have received its name. The origin of the name "Jerusalem," as applied to this plant, is a little curious. As already stated, the plant is a species of Sunflower, which in Italian is called *girasole*, turn-sun. The word *girasole* easily run into Jerusalem, a name now firmly fixed upon the plant, and does not, as many suppose, indi-

cate its origin, which is really South American. The plant is just now lauded by the French writers as being even more valuable than the potato. Its tubers furnish food for man and beast, its leaves are excellent forage for cattle, its green stems are good as manure, while the dried stems are of great utility as stakes for making fences. Then, of course, follow figures showing the great profit per acre, which we forbear to give. Notwithstanding the extravagant view the French have of this plant, it probably merits the attention of our Southern and Western friends as a food for swine, and some of them will do well to test its real value by planting it and allowing the hog to root it out.

Growing Water Cresses.

Among the salad plants of early spring, none are more highly prized than Water-Cresses. Judging from the high price at which they are sold in our city markets, their culture must be very profitable, inasmuch as a plantation once established yields a regular income every year. The water-cress (*Nasturtium officinale*), a member of the Mustard Family, is a native of Europe. It is, in many of the older settled parts of the country, naturalized in the ditches and streams. Though we have often collected the cress from the places in which it grows spontaneously, we never cultivated it, and as we can not draw upon our own experience, we give the following directions for its cultivation from the London Gardener's Chronicle, asking those who can suggest any modification of the mode of culture to do so. "Their cultivation is easy where there is a command of a gently flowing stream, and a depth of from 3 to 6 inches of water can be secured. If the bottom is of mud it must be removed and a new bottom of gravel substituted. The best time to form beds is May and June, for autumn use, and September and October for spring use, at which time select strong, well-rooted cuttings, and fasten them to the bottom of the stream on the gravel, by means of a stone placed on each cutting. The rows in shallow water should be 18 inches apart, but if the stream is very deep, 4 or 5 feet is not too much. Care should be taken, in gathering the crop, not to disturb the plants; hence it is always best to use a knife instead of breaking them off." The Bitter-cress, (*Barbarea vulgaris*), is sometimes sold in our markets. It is greatly inferior to the Water-cress, has less rounded divisions to the leaves, and its flowers are yellow, while those of the Water-cress are white.

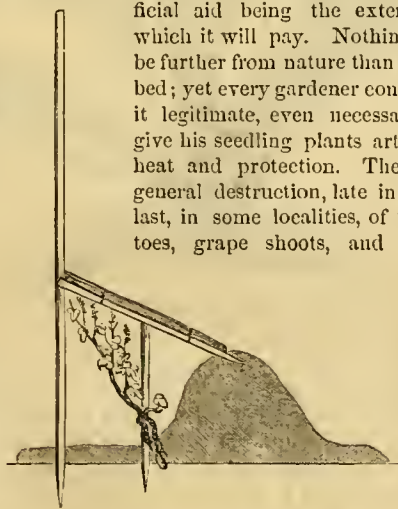
Increasing the Size of Fruit.

That a dozen fine specimens of any kind of fruit are better worth having, than double the number of half grown and poorly ripened ones is too obvious to require argument. Thinning the fruit is one of the most ready and effective means to secure its full development, but there are other aids which will be mentioned presently. Thinning is often omitted through negligence, but more frequently from timidity. Indeed it does require some courage to remove half the young fruit from a tree, until one has experienced its utility. Not only do the remaining fruits acquire greater size, but a degree of perfection never found in an overabundant crop. One of our principal growers of the Isabella grape, whose success is generally credited to his favorable location, attributes very little to this circumstance, but thinks that his almost certain

crop of well-ripened fruit is due more to his severe thinning—taking off three-fourths of the berries—than to anything else. The largest pear growers of our acquaintance thin severely. The amount to be removed in thinning will depend upon the variety and vigor of the tree; with trees in full bearing, from one-third to one-half the fruit may often be removed with advantage. The earlier it is done after the fruit commences to grow, the better, except with stone fruits, which are allowed to remain until the stone is formed. Where very large specimens of fruit are desired, growers resort to other expedients or tricks, some of which, such as "ringing" the bark, we can not commend, while others, such as shading the fruit during its period of growth until the time of ripening, are harmless. Supporting the fruit so as to relieve the strain upon the stem, and supporting it right side, or blossom end up, are both said to aid in augmenting the size. Some horticulturists in Europe go so far as to inarch a leafy shoot upon the fruit spur, and thus bring to the fruit a greater supply of sap than it would otherwise get; and a solution of sulphate of iron (copperas), 20 grains to the pint of water, is applied by the French gardeners. The fruit is wetted with this two or three times during its growth, and it is said to increase its size and improve its beauty by preventing fungous spots. But these are refinements that few of our readers will care to practice: thinning, added to good culture, will give all that need be desired.

Protection from Late and Early Frosts.

The direction given by Cromwell to his soldiers to "trust God and keep your powder dry," implies that Providence helps those who help themselves. Much of our horticulture is carried on with a blind trust in Providence, and a general neglect of the powder. Many of our growers scout the idea of protecting anything, and think that whatever is not perfectly hardy is not worth cultivating. Now, all cultivation is artificial; we give certain plants advantages which they do not possess in a state of nature, and anything that tends to assist the plant to its best development is legitimate; the limit to artificial aid being the extent to which it will pay. Nothing can be further from nature than a hot-bed; yet every gardener considers it legitimate, even necessary, to give his seedling plants artificial heat and protection. The very general destruction, late in May last, in some localities, of tomatoes, grape shoots, and other



PROTECTION FOR GRAPE VINES.

things, to the total loss of the crops, should lead us to consider whether some protection would not pay. We do not every year have such killing late frosts, but we do, almost without exception, have late in May, or early in June, a cold spell, in which several chilly nights give plants a check from which they are slow to recover. Then in autumn we have a few early frosts

which nip the tender things, dahlias, etc., just as they are in perfection, and usually after this, weeks of glorious weather, in which those plants that escape the first attack seem to fairly revel. It is surprising how slight a covering will protect plants. By a judicious use of sticks and newspapers, we have had dahlias bloom, and tomatoes continue in fruit, long after those of our neighbors were blackened and dead. In Europe, where horticulture is more developed than with us, protection is as much a part of the gardener's duties, as propagation, or pruning. How far it will pay is a matter that we have yet to learn. We find that it pays to cover strawberries by the acre, and in France, it pays to arrange vineyards of many acres with *paillasons*, for protecting the young growth, and covering the ripening fruit. Those who have small gardens and who cultivate as much for the love of it, as for the products, will be willing to take any pains to help their pet trees and vines. A sheet thrown over a vine when a frost is anticipated, will often save the season's crop. We some time ago (Feb. 1863) gave directions for making straw mats, which are always handy to have. Screens made of laths filled in with straw are very useful; these may be laid over plants, or two put together roof-wise, and give ready protection. We give a cut from Guyot on the vine, showing how protection is afforded in vineyards on a large scale. The vines are planted against ridges, which are 8 or 10 inches high, and trained low, much after the plan shown in figures 1 and 2, on page 224, of the June *Agriculturist*, except that the vine is planted slanting toward the stakes, for the purpose of allowing the protection to be used. A straw matting, supported by stakes and wires, is placed over the whole row of vines, and it is so arranged that it may be turned up vertically to afford protection against the prevailing winds. We have not space now to give minute details of this method of culture, but simply give these suggestions which no doubt some of our wide-awake cultivators will carry into practice.

Collecting and Studying Plants.

A number of persons ask us to say more about wild flowers, and to give illustrations so that they can identify the common plants they meet. We can not devote a large space to any one subject, and though some may like to have more said about wild flowers, there are others who care nothing for them, but wish fruit, field crops, garden vegetables, etc. We try to gratify all and neglect none. To those who notice flowers, we can not too thoroughly commend the study of them. Figures—mere portraits of plants—help the superficial observer to find the name, but this gives him little idea of the structure of the plant, or its relationships. A dozen plants well studied, and of which the structure is well understood, will be a greater help to a knowledge of plants in general than a volume of nicely made portraits. We can not do our flower loving readers a better service than to advise them to study Gray's *Lessons*, to get an idea of plant structure in general. We know of no work which presents the subject in such a popular, and what is equally important, thoroughly correct manner as this. A novice can read it and understand it, and the advanced botanical student will, from its perusal, get new light upon his science. The general structure of plants being understood, the determination of any particular one is easy. For this purpose we have no works, which, for completeness and

accuracy, will compare with Gray's Manual for the Northern States, and Chapman's Flora for the States south of Virginia. Our friends on the Pacific Coast must wait a year or so for Prof. Brewer's Flora of California, which will include nearly all the plants not contained in the other two works. So much for books. In collecting, it is a too common fault to have regard to the flower and nothing else, and those who commence collecting plants spend a year or two in drying "snips" from the tops of plants, to be thrown away when they have learned to make better specimens.

A specimen should be a complete representative of the plant—not only the flower, but bud, fruit, or seed, all its various kinds of leaves, and in small plants, even the root. With some plants these can all be represented in the same specimen, but with others it is necessary to collect specimens both in flower and in fruit. Shrubs and other woody plants have usually the same kind of leaves throughout, but with herbaceous plants the leaves near the root are often very different from those near the stem, and in collecting this should be kept in mind, and both kinds of leaves secured. In preserving plants, they are to be thoroughly dried, and as newspaper is usually the handiest, this may be used, though any unsized paper, brown is as good as any, may be used. Two sorts of paper are required: *folds* and *dryers*. *Folds* are simply pieces of paper folded once, just like a sheet of writing paper. The *dryers* are made of six or more thicknesses of paper, with a stitch through them to keep them together. Having folds and dryers prepared, lay down one or two dryers, then a fold, containing the plant nicely laid out, then another dryer, another fold, and so on, until all the plants are disposed of, observing to use two or more dryers above and below those folds which contain very juicy plants. When all the plants are in, put a board on the pile, and on this large stones or other weights. The pressure should be just enough to keep the plants from wrinkling—and not crush them—50 to 100 pounds, according to the number and nature of the plants. The next day, at least, the dryers must be changed. The pile is to be rebuilt with fresh dryers. Put down a dryer, on which place a fold from the pile, without opening it or disturbing the plant, then another dryer, another fold, and so on. Spread out the dryers from the first pile to dry, (the drier they are the better,) and then they will be ready to use in another change. Plants when first put in should have the dryers changed at least once a day, and if they are very succulent, still oftener. It is to be understood that the plants are not to be taken out of the folds until they are quite dry, and when the change of dryers is made, they are to be undisturbed. When quite dry, the plants may be put away into the collection or herbarium. Any arrangement that will keep together plants nearly related, will answer. We must defer a description of the usual form of a herbarium until another time. We would remark that it is best for all collec-

tors to adopt the standard size for their drying paper, about 11×16 inches, and all specimens should be bent or cut to conform to this size.

American Cowslip.—(*Dodecatheon Meadia*.)

Those who are familiar with foreign books and papers on floriculture, will have noticed the high estimation in which this plant is held abroad. Last spring, one of the English horticultural papers offered a prize for the best lists

country the not inexpressive name of "Shooting-star." The flowers are of a beautiful rose purple color, yellowish in the throat, and the general effect is heightened by the bright yellow of the stamens, with brown filaments. There is a white variety which is less showy than the ordinary color. The plant is found growing wild in the rich woods of Pennsylvania, and further South and West, and is quite hardy in cultivation.

It does best in a cool and somewhat shady situation. The foliage dies soon after the flowering is over, and the stools may be divided

when the plant is in the dormant state. Seeds are sold at the seed stores, from which, with proper care, the plant may be raised. The seeds are very fine, and like other small seeds, are best started in boxes. The name "Cowslip" is in some parts of the country applied to the *Caltha*, a yellow flower related to the Buttercup. This plant belongs to the same family as the true Cowslip—the Primrose family—one which gives us the Auriculas, Polyanthuses, Cyclamens, and other beautiful plants.—The botanical name *Dodecatheon*, means *twelve gods*; its application to this plant is not obvious. We hope to see increased attention given to hardy herbaceous plants, which have well nigh disappeared before the rage for bedding flowers, and among those we would commend to the notice of lovers of beautiful flowers is the *Dodecatheon*.

Horticultural and Botanical Congress.—Europe and America.

On the 22d of May last, there assembled in London, The International Horticultural and Botanical Congress. International* so far as Europe was concerned, for though an American here and there may have been invited, American horticulturists as a body were ignored by those having the matter in charge. We are not at all surprised at this, as it is of a piece with the "British neutrality" which has persistently refused to acknowledge the existence of horticulture in America.

Probably there never was an assemblage like that which convened at the time and place above mentioned, for the number of eminent horticulturists and botanists brought together, and while we regret that some representative man of our own country was not present, we rejoice

that so many of our trans-Atlantic brethren convened, and look for the report of their doings with much interest. We mention this foreign Congress as introductory to calling attention to a body of quite as much importance that is to meet in St. Louis, Mo., on the 4th of September next. To be sure this meeting is only that of the American Pomological Society, but it is as important to us as that of the International Congress is to Europeans. It will bring together cultivators from as widely different climates as did that Congress, and if we may not be as strong in the array of great names, we at least shall have men of large experience, whose deliberations, if properly conducted, will be of benefit to the cause of horticulture.



AMERICAN COWSLIP.—(*Dodecatheon Meadia*.)

of fifty herbaceous plants. Many lists have been published, and we find the *Dodecatheon* in at least half of them. Though so popular abroad it is seldom that we find it in cultivation here, except in the gardens of those who cherish these less fashionable plants. Our engraving is from a plant from a friend's garden, and to save room, one below the average size was selected. What can be prettier than this? A graceful stem arises from a cluster of leaves, and bears at its top a number of flowers upon long stems. The flowers are exceedingly quaint in their form, the corolla being turned sharply back, somewhat like those of the nearly related green-house Cyclamen. This peculiar shape of the flower has given it in some parts of the

At these meetings too much time is usually devoted to general desultory debate, and perhaps the same thing can not be avoided this year, but let us endeavor to have the next meeting conducted differently. Let the business be arranged beforehand, and committees be appointed for each fruit, and all communications be written and presented through them, and then a limited debate be allowed on the papers, confining the discussions to *things* without inuendoes concerning persons, or flings at localities. If papers were written and read, we should be spared loose talk and going over the same ground several times, as is the habit of many speakers. This Society is called the *American Pomological*; let us see that its future meetings are of a character that will reflect credit on the name, and that its proceedings shall be of a value that will make them sought for as exponents of our present pomological knowledge, and indices of our progress.

HOUSEHOLD.

What is Vanilla?

"Lemon or Vanilla?" is the question usually asked when one orders ice cream, showing the great popularity of these two flavors. Of the many who are fond of this peculiar and, to most persons, delicious aromatic, probably but few know anything more about it than that it is a sort of bean, as the article is known in commerce under the name of "Vanilla beans." Vanilla is one of the few economical products of that remarkable family of plants known as Orchids, or *Orchidaceæ*, so prized by the florist for the great beauty of its flowers, and so interesting to the botanist for the wonderful modifications of structure the flowers present. We have a number, such as the Lady's Slippers, Orchises, etc., which are all terrestrial, or grow in the soil; but in the tropics, where they abound, most of them grow upon the branches of trees, and draw all their sustenance from the air; hence when these plants are cultivated in our hot-houses they are popularly known as "air plants."

The Vanilla differs from most other orchids in being a climbing vine, such as we have shown in the engraving, clothing a dead trunk of a tree. It throws out great numbers of aerial roots, by which it clings, and produces very thick shining leaves. The flowers of the Vanilla are not as showy as those of most of the family, and are produced in clusters that are succeeded by bunches of long slender pods, which are the "beans" of commerce. In May last an account was given of the way in which insects conveyed the pollen from the stamens of the Iris and other flowers to the pistils, and more is said on the same subject on p. 257 of this number. It is worthy of note that the flowers of the Vanilla are in like manner dependent upon the help of insects, or they will produce no fruit. In tropical America, the native home of the plant, there are insects which understand how to do this, but in the East Indies, where the plant is cultivated, there are either not the right sort of insects, or they are less acute than the American ones, as the Vanilla produces no fruit unless the flowers are fertilized by hand. The pods are some 6 or 8 inches long, narrow, three-sided, and if allowed to remain on the plant, finally burst into three valves or parts, and scatter the minute black seeds. The pods are gathered when fully developed, dried in the sun, and afterward rolled up in parcels where they undergo a sort of fermentation, or sweating

process, to develop the odor. It is said that the fruit allowed to dry without this treatment possesses very little aroma. The pods are afterward oiled, done up in bundles, and sent to market. The best will be found to be frosted with minute crystals which are the aromatic principle. The name of the plant is *Vanilla aromatica*; Vanilla is a Spanish word, meaning a little pod. The Tonqua Bean, Sweet-scented Vernal-grass, Seneca-grass, Melilot, and some other plants, have an odor resembling that of Vanilla, and contain the same or a very closely related aromatic principle. Indeed, the Tonqua bean is often substituted for Vanilla in flavoring, and the "Extracts of Vanilla" are frequently wholly, or in part made of it. The Tonqua bean is much less expensive than Vanilla, but the substitution can only deceive those who are not familiar with the flavor of the two. Not only is Vanilla largely used to flavor ice cream, but for

vices. In what follows, we speak wholly from home experience, remarking that we have latterly been almost uniformly successful in securing a full supply of various fruits, that have been agreeable to the home circle as well as to visitors. The chief requisites, after the fruits, are: Some good, convenient form of bottles or cans, a cooking vessel, and sugar.

The Fruits.—Fruits of all kinds are easily preserved, as are also rhubarb or pie-plant, and tomatoes. The main supply of fruits proper for the year consists, in the order of abundance: 1st, of peaches, when plenty; 2nd, strawberries; 3d, cherries, when plenty; 4, pears; 5, raspberries and blackberries; 6, huckleberries, etc. Apple-sauce is put up plentifully at different seasons, usually in the bottles first used for other fruits. Pie-plant and tomatoes, are preserved in large quantities, so as to have an abundance whenever wanted, until they come again. Indeed, all the fruits are put up in supply to last until a new crop of each, and in a season of special abundance, a two years' stock is laid in. We seldom find much difference in bottles of fruits opened after one, two, and sometimes even three years.

Bottles and Cans.—We have used a dozen different kinds, and succeeded with most of them, but have latterly settled down upon a simple form of glass bottle, usually quart size, for everything but tomatoes, and in part for these. Our chief failures have been with some tomatoes carefully put up in glass bottles, which fermented; yet we shall continue to use these, expecting that further experience will secure unfailing success. We have never failed with tomatoes in sealed tin cans, large and small, and they do not seem to act upon the tin at all. Glass is always preferable, however, for all preserved fruits, etc., as unpleasant effects may sometimes result from corrosion. Any kind of glass bottles will answer, if the neck be large enough to receive the fruit handily, and of such form as to admit of tight corking,—if soft corks of good quality can be obtained to fit them. If the corks are softened in hot water, pressed in firmly, and covered tightly with wax and cloth tied over, or with a well waxed cloth tied on, they answer. A corked bottle inverted into a little tin dish or patty-pan, or in a saucer, containing a spoonful or two of cement, is effectually closed, if care be taken not to leave any air bubbles around the edge. The cement used is, $1\frac{1}{2}$ ounces of tallow melted with 1 pound of common resin, in a tin or iron vessel. Make in quantity, and heat it up as often as needed; every melting improves it. The only care required, in using wax for closing the bottle mouths, is to have the necks wiped clean after the fruit is put in, so that the wax will adhere firmly to the glass.

We now mainly use some kind of the patented bottles with covers closing upon an India rubber ring, which dispenses with wax. Any form that will absolutely shut out all access of air, will answer every purpose. We use most of the "Baker," or "Potter & Bodine" Jar, which is a wide mouthed quart bottle, with a tin or glass cover upon an India rubber ring, and held by a half oval clamp that is pressed down by turning it into a half screw swelling or projection upon the outside of the bottle neck. These are quickly put on and taken off. Any good form of bottles, though costing most at first, will in the end be the cheapest, as they will last for many years, with an occasional renewal of cheap rubber rings. We seldom break more than one or three bottles in a hundred, in a year's use.

The Cooking Vessel.—The best is the iron-porcelain Kettles, now quite common, which are very



VANILLA.

custards, Russes, cakes, and many other delicacies. Probably a reliable extract is the handiest form in which to use it. The best way to use the bean itself is to beat it in a mortar, with sufficient loaf sugar to finely divide and powder it, and to absorb all the oil. This is to be kept closely stoppered.

A Talk About Preserving Fruits.

In no other department of housekeeping has there been so great progress, during the past dozen years, as in the preservation of fruits. It is now practicable to have a supply all the year, nearly as good as the fresh picked. Instead of the dried apples, peaches, cherries and currants, and the concentrated costly jars of preserves to be brought out only for "company," or special occasions, it is now easy, and economical in money as well as in health, to have a daily supply of good, naturally flavored, almost fresh pie-plant, strawberries, cherries, blackberries, raspberries, peaches, pears, huckleberries, apple sauce, etc. The fruit thus kept, is healthful, and with high-priced butter a cheap bottle of nice fruit upon the tea-table, is economical, as it furnishes both nutriment and condiment.

There are various contrivances and methods for accomplishing the object, and each season brings out from half a dozen to two dozen new de-

convenient for many cooking purposes. They are iron vessels coated on the inside with porcelain, or white earthen-ware, glazed. One holding five or six quarts will answer. Wide flat ones are preferable. Copper or even brass vessels, if well cleaned, will do; or a tin pail or pan can be used.

The Sugar.—For very nice preserved fruit, as white peaches and pears, the best Refined A sugar is desirable, and for all kinds, we think sugar as good as the Refined B sugar is best, and even cheapest on the whole. For apple-sauce, put into cans for general family use, C, or the best light brown, will answer. Our rule is, to use just sugar enough to fit the different kinds of fruit for the table. Some families like more, and some less; hence no definite rule can be given. For the sweeter fruits, strawberries, peaches, sweet pears, huckleberries, and the like, we use 4 to 6 lbs. of sugar to the gallon of water, or $\frac{1}{2}$ to $\frac{3}{4}$ lb. to the pint. For more acid fruits, as cherries, plums, sourer pears, currants, crab apples, etc., about 1 lb. to the pint, more or less, according to the acidity, and ripeness.

Selecting and Preparing the Fruit.—As a rule, choose fully ripe fruit, but not that over-ripe. A soft or decaying spot may injure the flavor, and tend to decay the whole. If too green, the flavor will be inferior. The berry fruits are to be sorted, defective ones rejected, stems and hulls removed, and carefully but quickly washed if soiled, though this is always to be avoided if possible, as it injures the flavor, especially of raspberries and strawberries. Peaches, pears, etc., need paring. Some scald peaches, to aid in removing the thin skin, but they are better pared. They may be preserved whole, but are better cut in halves and the pits removed.

Cooking the Fruit.—Three methods are used: Some place the fruit in bottles with sugar added, put on the covers nearly tight, set the bottles in warm water, and heat to boiling, and after time is given to heat the fruit through, the covers are fastened down closely. We prefer, as being much less troublesome, to first cook the fruit in the porcelain or tin vessel, and then dip it hot into the jars, which must have been previously warmed to prevent their breaking, as noted below. For the nicest preserves, the fruit may be cooked in a syrup first, then dipped out into the hot jars, and a new syrup be filled in hot. The cooking syrup may be used for several successive batches of fruit, and finally for poorer kinds of fruit, or making common sauce. For ordinary preserving, the fruit and the syrup used in enoking it, may be dipped together into the bottle. *The amount of cooking is important.* Too little hazards the keeping, and too much, not only mars the appearance, but it greatly injures the flavor. In all cases have the syrup boiling hot and over the fire when the fruit is first put into it, and it will then heat through without becoming soft or losing its flavor. Only fruit enough to fill three or four bottles should be cooked at a time, or some will be overdone.

Strawberries should cook but 3 or 4 minutes before dipping them into the bottles, which should be previously all ready and hot. With this precaution they retain their natural form and flavor.

Peaches, being larger, require a little more time to heat through, but when fully ripe, 5 to 7 minutes is long enough, and the same is true of well ripened pears, especially the Bartlett's, and Virgilians, which, by the way, make a most delicious preserve.

Quinces, and hard pears, may cook 10 to 15 minutes, or more, for they should become tender.

The general rule for cooking, is, to have the soft fruits just heated through to the center, as quickly as may be after they go into the syrup, and then get them into the bottles immediately, giving no time for the escape of the aroma.

Tomatoes, well ripened, are scalded to skin them easily, then put into just water enough to prevent burning, and carefully cooked $\frac{3}{4}$ to a full hour, thus reducing their bulk materially. A very little salt is added, but no sugar. They can be seasoned and sugared when wanted for use.

Rhubarb or Pie Plant.—Cut the stems in small pieces, as usual. Cook with only a few spoonfuls

of water to keep it from burning before its own juices are at liberty. Boil $\frac{1}{2}$ hour, or so, or until ready for the table, and bottle without sugar added. This is excellent for winter and early spring use as sauce, and in making pies. It may be used in various ways. With crackers a pie very closely resembling apple pie, can be made.

Bottling.—Have all needed bottles, corks, covers, wax if used, etc., ready before beginning to cook the fruit. Have a kettle of hot water on the stove, and the last thing before cooking the fruit, dip a bottle rapidly in and out of the hot water until heated through, then fill it with the hot water and let it stand, and so with all the bottles needed for one batch of fruit. When that is cooked, pour out the hot water, and dip full of fruit and syrup, or, if new syrup is used, as noted above, fill with the hot fruit skimmed out, and pour in the new syrup last. For soft or nice fruits, dip in carefully, with the jar inclined, to avoid bruising or breaking. Let the bottles stand about two minutes, jarring them to facilitate the escape of air bubbles; wipe the tops carefully clean with a damp hot cloth, then pour in enough more syrup to fill them, if there is much settling. Now apply the caps, and clamps, or other covers, or corks, and close the bottles as closely as may be—or air-tight. One point is, to have little if any air left in the fruit. As there is always a little, often enough to produce a tuft of mouldiness on the top, which does not injure the mass in the bottles, if not mixed with it in handling, it is well in opening a bottle, to always remove a thin film from the top. Store the bottles on shelves in the cellar or other cool place, where they will not be exposed to great changes of temperature.

Boiling Eggs—Sundry Ways.

Messrs. Editors.—The writer is fond of boiled eggs—very. Soft boiled and hard boiled, but not par boiled. The readers of the *Agriculturist* may know exactly how to boil an egg to perfection, but if they do, they are an exception to the people I meet with away from home. Call "time"; plump the eggs into a sauce-pan of boiling water—in three minutes, "time," again, and the eggs are done. Half a minute more makes them too hard, and half a minute less leaves them glairy. So eggs are usually boiled, except at restaurants, where, if you are so indiscrete as to ask for soft boiled eggs, they are not cooked at all, but barely heated through. The eggs so cooked have their whites hard and tough as leather, their yolks barely cooked at all. I do not like them so, and hope your readers will try my plan, which is indeed not mine, but old enough.

How to Boil Eggs without Boiling them.—Scald out a dish that will hold the eggs and twice as much water. Wash the eggs clean; put them in the dish and fill it with boiling water; set it in a warm place for 5 minutes; then pour off the water, add as much more (boiling) and send at once to the table. Within 2 or 3 minutes the eggs will be cooked enough for those who like very soft boiled eggs; a little while later they will be done through, the white as soft as curd, yet well done, and the yolks will be cooked. The quantity of water should be in proportion to the number and size of the eggs, and if the water be poured off and a third time boiling water added, the white will not be tough and leathery.

To Boil Eggs Hard, put them into warm water and let it come to a boil, and boil 10 or 15 minutes. The yolks will then be crumbly.

To Poach Eggs—first prepare toast, taking pieces as large as one's hand, buttered, salted and made soft with warm water, or use hot milk with the butter and salt in it. Cover the bottom of a frying pan with $\frac{1}{2}$ to $\frac{3}{4}$ an inch of water, and when boiling, break into it carefully the eggs, one after another, not putting too many in at once, and remove them as fast as the whites are cooked. Take care not to break the yolks and lay each egg upon one of the pieces of toast. A friend states that the eggs may be dropped in muffin rings laid in the frying pan, which is an improvement in the looks at least of the dish. Poached eggs are vastly better than fried, even with fried ham. X.

Cooking Cabbage.—Boil until tender, in clear water, or with other vegetables as may be convenient, then chop fine. To one medium sized cabbage head add two tablespoonfuls of thick cream, a bit of butter half as large as a small hen's egg, salt and pepper, or add vinegar to suit the taste.

For other Household Items, see "Basket."

BOYS & GIRLS' COLUMNS.

How to Play Base Ball.

(Continued from page 229.)

The players having taken their proper places, the pitcher delivers the ball for the first striker. He must *pitch*, not throw nor jerk it. With practice, this can be done both straight and swiftly, and experienced pitchers acquire a way of giving the ball a peculiar twist as it leaves the hand, making it more difficult for the striker to hit it squarely; this may prevent his giving it a full blow and driving it far into the field. The pitcher must deliver the balls fairly, so as to come within good range of the striker. If he fails to do this repeatedly, the umpire after warning him, calls "one ball," then "two balls," and if he calls "three balls" in this way, the striker has the privilege of going unmolested to the first base, and any batsman who may be occupying bases, may also walk one base further.

The striker watches for a good ball, and when it comes, tries to strike it with his bat as far into the field as possible, and also to drive it in such a way that it may not be caught by the fielders. He may do this by forcing it beyond them, or by making it go low, or by sending it between the fielders, if he see a good opening. As soon as he has struck, he drops the bat and starts for the first base, which he must touch with his foot or otherwise. Meantime the fielders endeavor to touch him with the ball while passing from base to base. The ball must not be thrown at the striker, but he must be touched with it while it is in the hands of a fielder; if the fielder, while standing on the first base, can get the ball before the striker reaches that point, the striker is "out." The striker watches his chances to run from the first to the second base, then to the third, and finally "home," without being touched by the ball while passing from one base to another, or when standing without touching the base. If he succeeds in doing this he is credited with one "run" by the scorer. When a player sends the ball so far that he runs around the whole course touching each base, without being put out, it is called a home run. This, however, counts no more than an ordinary run. [We think it would be an improvement to have it count two.—ED.] The strikers take their turns in regular order, each trying to make a run in the manner described above. At each innings after the first, the next player to the last one put out, takes his turn at the bat. In running, the striker must keep within three feet of a direct line from base to base; otherwise he is counted "out." If the ball when struck, first touches the ground, or any other object behind the range of home and first base, it is "foul," and must be so declared by the umpire. In such case, the striker must return to the home base and try again, and any player having started to run from base to base, must return to the base which he left. He may be put out while doing this; the striker is exempt while returning to the home base after having struck a foul ball.

The striker is out if a foul ball is caught before touching the ground, or upon the first bound; or if three balls are struck at and missed, and the last is caught before touching the ground; or if a fair ball is struck and caught in the same manner. If three balls are struck at and missed, and the last one is not caught either flying or upon the first bound, the striker must attempt to make his run, as though he had struck a fair ball. When a fair ball has been caught before touching the ground, players running the bases must return to the places whence they started, and they may be put out while so doing in the same manner as a striker running to his first base; but players when balls are so caught, may run their bases immediately after the ball has been settled in the hands of the player catching it. If a player refuses to strike at fair balls, the umpire should call "one ball," and if he continues to refuse in the same manner, then "two balls," "three balls," and at the third call, the player must run as though he had struck.

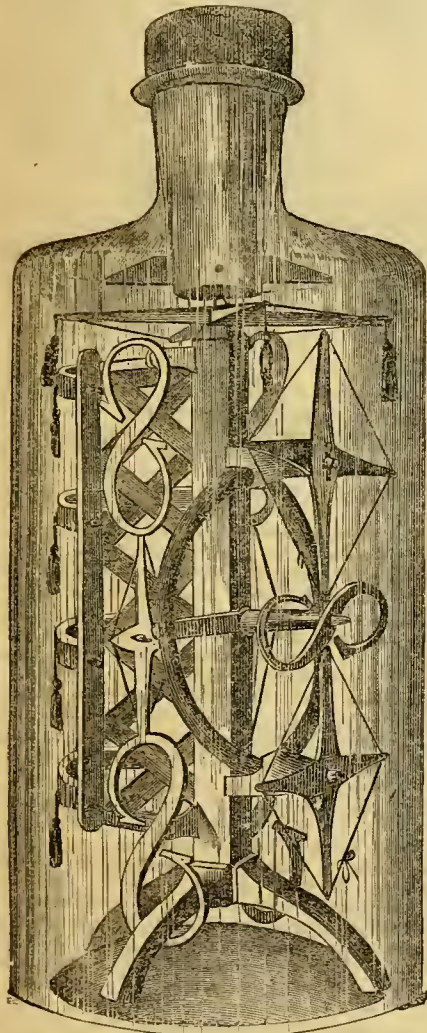
Players must make their bases in the order of striking; and when a fair ball is struck and not caught flying, or on the first bound, the first base must be vacated, as also the second and third bases, if they are occupied at the time. Players may be put out on any base under these circumstances, in the same manner as the striker when running to the first base. Any player who shall intentionally prevent an adversary from catching or fielding the ball, shall be declared out. If the player is prevented from making a base by the intentional obstruction of an

adversary, he shall be entitled to that base, and not be put out. If an adversary stops the ball with his bat or cap, or takes it from the hands of a party not engaged in the game, no player can be put out until the ball has first been settled in the hands of the pitcher.

If a ball from the stroke of a bat is caught by an adversary, except as stated in the previous rule, and without having touched the ground more than once, the player is out. If two batsmen are already out, no player running home at the time the ball is struck can count a run if the striker is put out. When three of the batsmen are put out, the fielders take the innings, exchanging places with the former. A match game consists of nine innings to each side, and the side scoring the most runs, wins the game. If the number of runs should be equal, the play is to be continued until a majority of runs is made by one side upon an equal number of innings.

Awards for the Prize Puzzles.

This announcement we expected to be able to make last month, but the Committee to whom the contributions were referred, were not quite ready to report when the paper was sent to press. A very large number of communications were received, many of them excellent in their way, some of which will appear from time to time in these columns. The unsuccessful competitors should not feel that their efforts have been thrown away. The thought, attention, patience, and care, necessary to construct a puzzle, give pleasant and healthful exercise to the mind, combining both work and recreation, and thus some good has come from trying. Failures may be made beneficial if they stimulate a person to try again



In any laudable undertaking; many who have sent puzzles, can, with a little effort, bring out something worthy to be published—keep on trying.

The following are the decisions of the Committee:

1st.—*The Best Mechanical Puzzle.*—Most of those received had not enough originality to claim attention; of the others, none were deemed of sufficient excellence to merit the prize as puzzles. The nearest approach to it was a piece of very ingenious workmanship made by Paul Frick, of Jonesboro, Ill., an engraving of which is given above. It is a fanciful piece of wood work, the different parts neatly finished and joined together by pins and cords, and the whole is enclosed in a glass bottle. The stopper is secured in its place by a cross-piece

running through its lower part. The puzzle about it is, how was it put into the bottle. The maker assures us that the whole was introduced into the bottle's mouth, and put together by means of a knitting needle. This curious article is now on exhibition at the office of the *Agriculturist*, and attracts much attention from visitors. The twenty dollars were awarded to Mr. Frick.

2nd.—For the best *Arithmetical Problem*, ten dollars, to Josiah Keep, Paxton, Mass.

3d.—For the best *Hieroglyphical Rebus*, ten dollars to Charles Darwin, Cambridgeport, Mass.

4th.—For the best *Riddle or Enigma*, five dollars to Mrs. J. P. Ballard, Cambridgeport, Mass.

5th.—*The best Conundrum.*—To the surprise of the Committee, none of the original contributions were deemed worthy of publication, and therefore no prize is awarded.

The Prize Problem, Rebus, and Enigma, will be found under "New Puzzles" in the next column.

The Soldiers' Dogs.

Not long since a dog named "Toutou," came to Paris with a regiment of Zouaves which had returned from Italy. The soldiers were all greatly attached to him, for he had passed safely through a singular adventure which deprived them of all other dogs belonging to the regiment. When the war commenced the Zouaves embarked for Genoa; but as they were going on board the ship, they saw a formal order forbidding the entrance of all dogs upon the vessel. As they were very much attached to their dogs, they were stricken with grief. It was not easy to deceive the sharp lookout kept, for every soldier advanced along the narrow gangway, one by one, as his name was called. Necessity is the mother of invention. The drummers unscrewed their drums and the best dogs of the regiment were concealed in the drums which were screwed up again. When regiments embark no music is played, but on this occasion the Colonel determined there should be music. He ordered the trumpets and drums to take the head of the column, and to play a lively tune. The face of the drummers—every one of whom had a dog in his drum—grew very long! The trumpets sounded; the drums were all silent. The Colonel got angry and bawled to know why the drums did not beat. There was but one thing to do and that was to beat. The moment the drums began to beat, innumerable dogs began to howl and to bay, to the astonishment of everybody but the Zouaves. Everybody looked right, left, backward, forward—no sign of a dog anywhere; and yet, the more the drummers beat, the more the dogs howled. At last a spaniel fell out of a drum, rolled over and over on the ground, got up and took to his heels, howling louder than ever. Roars of laughter greeted this explanation of the mysterious howls. The drummers were then ordered to advance on board, one by one, and each to roll the drum as he came. If a barking was heard, the drum was unscrewed, and the dog put ashore. Only one dog got on board; this was Toutou, who kept quiet through all the rolling.

Early Days of a Noted Chemist.

Mr. Michael Faraday, now living in England, one of the first chemists in the world, distinguished especially for his brilliant discoveries in Electricity, was the son of a poor blacksmith. He was early apprenticed to a book-binder and bookseller, and while learning his trade amused and improved his leisure by making a small electrical machine and other philosophical apparatus. His master, pleased with the boy's talent, mentioned his acquirements to a customer who was a member of the Royal Institution. This gentleman took young Faraday to hear some of Sir Humphrey Davy's lectures. The apprentice made careful notes of the lectures and wrote them out fairly in a neat volume. He disliked his trade and desired to become a scientific man, and at last took the bold step of writing to Sir Humphrey Davy, expressing his wishes and the hope that he might be favored in his views. With the letter he sent his "notes of the lectures." The great chemist was struck with the knowledge displayed in the notes, as no one could correctly report a chemical lecture without knowing something about the science. He invited the boy to call on him, procured him a situation as assistant in the laboratory of the Royal Institution, and afterward associated him with himself in his travels, studies and experiments. He industriously improved his ample opportunities and thus succeeded in rising to the front rank of his profession.

Getting the Worst of it.

"Do you want any berries ma'am?" said a little boy to a lady, one day. The lady told him she would like some, and taking his pail from him, she stepped into the house. He did not follow, but remained behind whistling to some canaries hanging in their cages on the porch. "Why do you not come in and see that I do not cheat you?" asked the lady. "I am not afraid," replied he; *you would get*

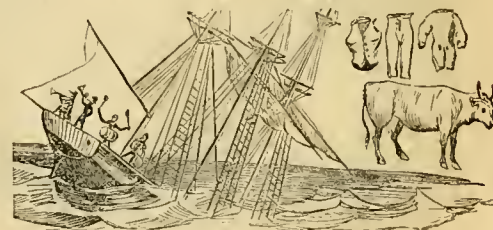
the worst of it ma'am."—"Get the worst of it, what do you mean?"—"Why ma'am, I should only lose my berries, and you would be stealing; don't you think you would get the worst of it?"

Answers to Problems and Puzzles.

The following are answers to the puzzles, etc., in the June number, page 229. No. 210. *Illustrated Rebus.*—Wood u c k lamb eye t ass o c eight with fools but two s cape rep roach a band on vicious oo's i e t, or: Would you see calmly associate with fools; but to escape reproach abandon vicious society.... No. 211. *Illustrated French Rebus.*—*J'ai traverse par i sans sou liers*; which may be translated, I walked through Paris barefooted.... No. 212. *Illustrated Rebus.*—Above, below, around, within, I wander in my dreams.... No. 213. *Mathematical Problem.*—The squirrel went nine times to the box; each time he carried away one ear of corn, and his own two ears, making three taken at each journey.... No. 214. *Enigma.*—All mankind are born free.

The following have sent correct answers up to June 4th: Orrie Wadley, S. P. Howland, C. M. Derwent, J. Dexter Andrew, Joel M. Reeves, Daniel Perrin, Beckie K. Morse, George Fern, Jennie Fletcher, W. B. Phelps, John T. Yarrington, Chauncey Wise, James D. Brewer. Many other names are omitted for want of room.

New Puzzles to be Answered.



No. 215. *Prize Rebus.*—Very good advice.

No. 216.—*Prize Enigma.*

The sage that heads above the tome
In mystic cypher found
Seeks for my first, quick uses it,
Then throws it all around.

The Artist links it with his fame

In pictures new and old—

The miser likes it least of all

Among his bags of gold.

My second, whether rich or plain

Is but a valued casket,

Its treasured gems no gold could buy,

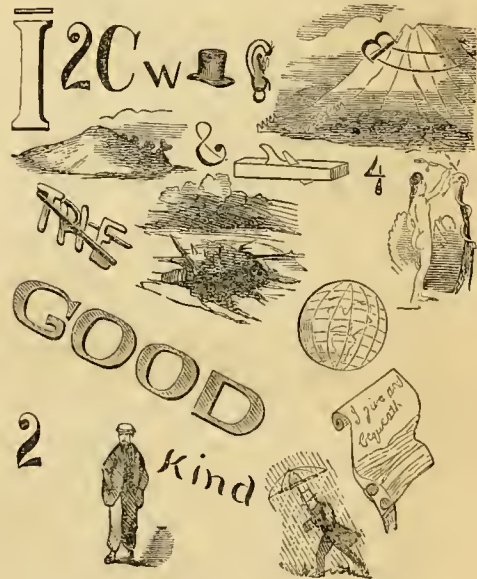
Nor diamonds should you ask it.

My whole was made to send my first

Further than could be done without it,

And saves my second from the gloom,

Its lack has often thrown around it.



No. 217. *Illustrated Rebus.*—A very good wish.

No. 218. *Prize Arithmetical Problem.*—Contributed by Josiah Keep, Paxton, Mass. Two locomotives, A. and B, on a straight and level track, are approaching each other. A. is moving at the rate of 10 miles an hour. B, at the rate of 20 miles an hour. When the whistle of A, is 3 miles from the engineer of B, it is blown for $\frac{1}{2}$ minute. What will be the distance of the engineer of B, from the whistle when he ceases to hear the sound, supposing sound to travel 1130 feet per second.



THE FORTUNATE GIRL.

That is the way it used to be with children in old times—at least some people thought so. According to their belief, a great many “little people,” as they were called, lived all over the world. They were said to be very strange creatures—some of them so small that they could easily creep through the cracks of the doors, and so active that they could catch a bird on the wing. Very few could say they had ever seen them. Once in a while a man would tell wonderful stories of how they appeared to him; but it usually happened that he was tipsy at the time, or something else disturbed his brain, so that he could not give a very creditable account of them. But almost every one was ready to tell what they had done. One said they twisted the grass, so that she stumbled, fell, and spilled a pail of milk; another declared that the edge of his ax was blunted by them, and many were sure that the little people stole the milk from their cows in the night time, in short, whatever mischief was done, the little people were sure to be blamed for it. Now, if there were such sprites, that was just the way to make them mischievous, for I never knew any body to be made better by continual fault-finding, and no praise. But in some fortunate places, good little people were said to make their homes, and then every thing prospered. The cows gave plenty of rich milk, the grain grew finely, the lambs all lived, and there was peace and plenty. You can see by the picture how they busied themselves with the children. Notice how that boy's face is drawn out of shape by the little furies that are tormenting him. Poor boy! What would he do if he could see and catch them. Would he not show as little mercy to them as you would to a mosquito or flea? But the sweet little girl has fallen into good hands. Perhaps her sunny face attracted the pleasant little people, and they like to help her smile.—Since the little people have been driven away from the earth by the noise of steam engines and printing presses, children can no longer blame these creatures for mischief, nor expect their help in being good; the spirits which aid in doing right or tempt to do wrong are very different from any such beings. They

know how to find the way to the thoughts, but they will give little trouble to those who do not encourage them. So Master Charlie, and Miss Katy, take good care and govern yourselves right, and let sunshine from your hearts make your joyous faces bright.

A Little Boy's Experiences.

April 10th. At last we have finished plowing for a while at least, and I am glad of it; for I am tired of driving oxen. Brother Charlie says I have been talking to the team, hallowing “whoa”! “back”! “haw”! almost every night. My mind kept “marching on,” while my body was sleeping. I don't know much to write, that happened last week. We plowed up a field-mouse's nest one day. There were four young ones and their mother. The old one started to run at first, but came back to defend her family. I couldn't help feeling sorry when Jumper killed her with one bite. At first he went smelling about the nest, as though he wanted to play with the little mice, but the old one flew at him, and fastened her teeth in his nose, and then he gave her a sharp snap. At another place, the plow ran through a large red ant's nest. It made a great commotion among the inhabitants of that underground city. There were streets all through it, and the ants ran up and down in wild confusion. There were hundreds of white eggs, which the ants picked up in their mouths and twice carried away out of danger. There were also baby ants, nearly white, which the older ones took up. We stopped to watch them a while. Pretty soon I felt sharp stinging bites on my legs, and at the same time, Jumper who was also looking on began to whine and caper about, and roll, in a very frantic way. The ants had attacked us, and we found them able to inflict considerable pain. The bites soon got well. I think I should not like to live in Africa where the ants are plenty and very powerful. They raise hills as high as a man's head, and they can gnaw through wood. Missionaries living there say that they destroy clothing, books, and even houses.—I have



THE UNFORTUNATE BOY.

already begun to train my calves. I believe they know me, for I feed them every day, and they will let me handle them. I expect to halter-break them so that I can lead them about.—A pair of blackbirds are building their nest in a gourd which I hung up against the house near my bedroom window. It is pleasant to watch them as they go in and out with bits of straw. They keep up a merry warbling, and seem very happy in getting ready for housekeeping. They seem to have a great deal of consultation together, about their furniture, although they have only one bed-room to fit up.

April 12th. I had a quarrel with Charlie this morning about the garden. Father said we might each have a bed to raise what we pleased. We both wanted the same corner, and we both got angry. He is two years younger than I am, and I am ashamed that I was so selfish. Father would not decide between us. He said we must settle it in some way pleasantly, before either of us could have any garden. Charlie went off to school, and I helped father mend fence. After thinking it all over I thought I would tell Charlie, as he was the younger, he could have the corner. When he came home the first thing he said to me was, “Fred, you can have the corner, you are older than I am.” Then I told him what I had been thinking of, and we finally agreed to go in partnership, and both take the corner and work it together. Father liked this, and said he would give us some Japan melon seed to plant. If we raise good melons we can have the pleasure of eating them, and also get a good price for the seed, as they are not very plenty yet. I'm glad our quarrel is all over, for it made us both feel very unhappy.

A GRAVE QUAKER once, passing through a bad street, was astonished to see his son emerge from a den which no decent person would frequent. The graceless youth drew back, hoping to escape observation. “Nay, Isaac,” said the sad, astonished parent, “never be ashamed of coming out of that sort of place; but be especially careful nevermore to go into one.”

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Commercial Matters—Market Prices.

The following condensed, comprehensive tables, carefully prepared specially for the *American Agriculturist*, show at a glance the transactions for a month, ending June 12, 1866, and the exports of Breadstuffs from this port thus far, since January 1:

1. TRANSACTIONS AT THE NEW-YORK MARKETS.						
RECEIPTS.	Flour.	Wheat.	Corn.	Rye.	Barley.	Oats.
22 days <i>this m'th.</i>	252,600	283,000	1,686,000	47,000	81,000	5,800
25 days <i>last m'th.</i>	153,000	5,500	69,000	1,400	107,000	34,000
SALES.						
	Flour.	Wheat.	Corn.	Rye.	Barley.	Oats.
22 days <i>this month.</i>	271,000	307,000	2,138,000	174,000	43,000	
25 days <i>last month.</i>	428,000	1,561,000	1,245,000	204,000	95,000	
2. Comparison with same period at this time last year.						
RECEIPTS.	Flour.	Wheat.	Corn.	Rye.	Barley.	Oats.
22 days 1866.....	252,000	283,000	1,686,000	47,000	81,000	5,800
25 days 1865.....	153,000	5,500	69,000	1,400	107,000	34,000
SALES.						
	Flour.	Wheat.	Corn.	Rye.	Barley.	Oats.
22 days 1866.....	271,000	307,000	2,138,000	174,000	43,000	
25 days 1865.....	428,000	1,561,000	1,245,000	204,000	95,000	
3. Exports from New-York, January 1 to June 11:						
	Flour.	Wheat.	Corn.	Rye.	Oats.	
1866.....	420,583	138,552	2,780,226	171,836	722,172	
1865.....	567,614	330,601	2,683,405	141	44,143	
4. Receipts at head of tide water at Albany, each season to end of May:						
	Flour.	Wheat.	Corn.	Rye.	Barley.	Oats.
	bbls.	bus.	bus.	bus.	bus.	buslh.
1866.....	21,700	103,810	1,381,299	57,000	49,700	570,700
1865.....	64,900	402,800	569,500	20,800	99,800	1,711,000
1864.....	51,100	2,451,400	3,374,400	22,400	99,100	1,181,900
1863.....	130,700	2,615,600	3,221,300	41,300	46,600	1,327,000

CURRENT WHOLESALE PRICES.

	May 15.	June 11.
PRICE OF GOLD.....	129 1/2	139 1/2
Flour—Super to Extra State.....	\$7.40 @ 9.75	\$6.70 @ 9.75
Super to Extra Southern.....	10.40 @ 12.75	10.40 @ 12.75
Extra Western.....	8.60 @ 12.75	7.90 @ 12.75
Extra Genesee.....	9.80 @ 14.50	9.80 @ 14.00
Superfine Western.....	7.40 @ 8.20	6.75 @ 8.00
Rye Flour.....	6.50 @ 7.00	6.00 @ 6.75
CORN MEAL.....	3.85 @ 4.25	4.35 @ 4.75
WHEAT—All kinds of White.....	2.30 @ 3.00	2.50 @ 3.00
All kinds of Red and Amber.....	2.00 @ 2.50	2.20 @ 2.70
CORN—Yellow.....	83 @ 88	83 @ 89
Mixed.....	75 @ 81	72 @ 81
OATS—Western (new).....	48 @ 61	51 @ 56
State (old).....	63 @ 64 1/2	— @ 75
RYE.....	65 @ 115	— @ 125
BARLEY.....	80 @ 129	81 @ 129
HAY—Bale of 100 lb.....	60 @ 90	60 @ 90
LOGS.....	65 @ 95	65 @ 95
STRAW, of 100 lb.....	60 @ 110	60 @ 100
COTTON—Middleings, of lb.....	33 @ 35	38 @ 41
HOPS—Crop of 1865, of lb.....	20 @ 65	15 @ 65
FEATHERS—Live Geese, of lb.....	55 @ 85	45 @ 85
SEED—Clover, of bushel.....	8 @ 11	8 @ 10 1/2
Timothy, of bushel.....	6.00 @ 6.75	Nominal.
Flax, of bushel.....	2.50 @ 2.70	2.70 @ 3.00
SUGAR—Brown, of lb.....	9 1/2 @ 13 1/2	9 1/2 @ 11
MOLASSES, Cuban, of gal.....	40 @ 65	48 @ 65
COFFEE—Rio, (Gold price) of lb.....	15 1/2 @ 20 1/2	15 @ 20
TOBACCO, Kentucky, &c., of lb.....	40 @ 30	40 @ 30
Seed Corn, of bushel.....	3 @ 4 1/2	5 @ 4 1/2
WOOL—Domestic Fleeced, of lb.....	25 @ 75	33 @ 75
Domestic, pulled, of lb.....	25 @ 58	28 @ 57
California, unwashed,.....	12 @ 38	15 @ 40
TALLOW, of lb.....	11 1/2 @ 12 1/2	11 1/2 @ 12
OIL CAKE—of ton.....	40 @ 45 50	47 @ 49 10
POKE—Vess, of barrel.....	29 1/2 @ 33 1/2	29 1/2 @ 31 1/2
Prime, of barrel.....	21 1/2 @ 25 1/2	24 1/2 @ 25 1/2
BEEF—Plain mess,.....	16 00 @ 20 50	16 00 @ 20 51
LARD, in barrels, of lb.....	19 @ 22 1/2	19 @ 22 1/2
BUTTER—Western, of lb.....	32 @ 43	20 @ 32
State, of lb.....	35 @ 48	35 @ 40
CHEESE.....	10 @ 20	8 @ 19
BEANS—of bushel.....	1 00 @ 2 00	1 50 @ 2 25
PEAS—Canada, of bushel.....	1 20 @ 1 25	1 15 @ 1 20
EGGS—Fresh, per dozen.....	18 @ 21	19 @ 22
POULTRY—Fowls, of lb.....	28 @ 30	24 @ 25
Turkeys, of lb.....	25 @ 30	24 @ 25
Geese—Vessers, of bushel.....	3 25 @ 4 50	3 50 @ 4 25
Peach Blows, of barrel.....	4 00 @ 4 37	4 00 @ 4 50
Buckeyes—New, of barrel.....	3 00 @ 3 25	3 00 @ 3 25
APPLES—of barrel.....	3 60 @ 6 50	2 00 @ 7 00

Gold advanced during the past month to 146 1/2, influenced by unfavorable financial and commercial advices from Europe, and the consequent heavy exports of specie from this port. The demand has since fallen off, and the price has receded to 139 1/2. Business in Produce and Merchandise has been on a more extensive scale, and prices of most articles have been quoted higher, though irregular. Breadstuffs have been in better request, opening at rising prices, but closing generally in favor of purchasers. Flour leaves off quite heavily, under more liberal receipts. Prime Wheat is scarce and held firmly. Inferior and common qualities are very quiet and much

depressed. There has been increased activity in Corn, with free purchases for export,—the market closing with a downward tendency, under large arrivals from the interior. Rye and Oats have improved materially, the inquiry having been quite brisk for desirable lots. Provisions have been in good request, partly on speculation, but prices have been unsettled. Pork, Lard, and Beef, closed pretty firmly. Butter leaves off decidedly heavy, under extensive receipts and a strong pressure to realize. Cheese is dull and drooping. Cotton has been more active and has rallied in price, closing briskly and in favor of sellers. The available supply now here is estimated at 100,000 bales; and at all the shipping ports of the country, at 331,000 bales. Wool has been in somewhat better request and firmer in price, but it closes less buoyantly. Hay, Hops, and Tobacco, have been in fair demand at uniform rates.

New York Live Stock Markets.—

Beef Cattle.—The supply for a month past has been fully an average one, after allowing for a natural increase over the previous year, but prices have been fully sustained and advanced a little last week. This is due to cool weather, which has greatly diminished the taking of fish, and kept back spring vegetables and strawberries, both of which circumstances have increased the consumption of beef, the staple meat this year. The scattering of the sales from the main yards at 4th street, to Bergen and other points, enables dealers to obtain better prices, as buyers who only visit one market place and see fewer cattle there, act upon the impression each week that there is a very limited supply. Most of the increase in price has inured to the benefit of the speculating brokers who manage the markets after they have bought up the droves on the way here. The most recent sales of cattle have been at prices equivalent to 16 1/2c. @ 17 1/2c. per lb. dressed weight for good to first quality cattle; 17 1/2c. @ 18c. for extras; 15c. @ 16c. for medium grades; and 13c. @ 14c. for poor. **Milch Cows.**—Receipts for the month moderate, and demand not large. Prices continue very high, as compared with former years. Small, thin cows, giving 8 to 10 quarts a day on good feed, sell at \$65 @ \$75 each, including the calf, which is always required by buyers to insure freshness of milk. The calves are worth about \$10 each, on the average, making the cows cost the purchasers \$55 @ \$65. Cows giving 11 to 13 quarts per day bring \$70 to \$80 with the calves; those giving 14 to 16 quarts, \$85 to \$90. Extra cows, promising a continuance of over 16 quarts of good milk per day, run upward of \$90, according to fancy, looks, etc.—though very few of this class are met with. Those giving below 7 to 9 quarts are not worth bringing here, as they go for all sorts of prices, from \$60 down to \$40, and are worth more to dry off, feed up a little, and sell for cheap beef. **Veal Calves.**—The supply fair, running from 2000 to 1600 a week. Poor calves are at a discount, and not worth sending here. Good heavy calves, of fair age, have improved in value, extras bringing 12 1/2c. @ 14c. per lb. live weight; good, 11c. @ 12c.; common, 9c. @ 10c., and poorer, 7 1/2c. @ 8 1/2c., though few not worth over 8c. can be sold. **Sheep and Lambs.**—Receipts 14,000 to 18,000 per week. Prices of sheep have been much depressed, but are rather better again. Good lots have recently sold at 7 1/2c. @ 7 3/4c. per lb. live weight; common, 6 1/2c. @ 7c.; poor, 5 1/2c. @ 6c. Good spring lambs are not very abundant; prices, 11c. to 14c. per lb., for poor to best, or \$1.50 @ \$7 each. **Live Hogs.**—Receipts very large for the season, or 12,000 to 16,000 per week; but cool weather, and a prospect of a war demand for packed pork in Europe, have kept up prices well. Fair to very good sell at 10c. to 10 1/2c. per lb. live weight.

Advertisements, to be sure of insertion, must be received BEFORE the 5th of the preceding month.

TERMS—(cash before insertion):
Ordinary—\$1.25 per line of space, each insertion.

New York State Agricultural Society.

IMPLEMENT TRIAL

TO BE HELD AT THE

CITY OF AUBURN.

Commencing on the 10th day of July

With the trial of Mowers, and will continue until all the Implements shall be tried.

Trial open to all the States and Canadas.

Entries to be made at the Secretary's Office, Albany, at least one week previous to the 10th of July. Entrance fee \$15.00, for each implement in each class.

A programme of the Trial, with a list of implements to be tried, and a list of Judges will be furnished on application to the Secretary.

J. STANTON GOULD, President.
STATE AGRICULTURAL ROOMS, }
Albany, May 24th, 1866. }

D. L. I. Engineering School,
FRANKLIN, DELAWARE CO., N. Y., has full equipment,
and offers thorough instruction. **Special Advantage,**
the small cost of living. For Circular, Address
GEO. W. JONES, A. M.

FULL BLOOD

AND
GRADE ALDERNEY,
AND
Ayrshire Stock for Sale.

The subscriber has given his attention for the last few years to the breeding of this truly celebrated stock, and now offers for sale a portion of his herd, comprising some seventy-five head of all ages and grades. Among them are many fine family cows and heifers. Persons wishing to supply themselves are invited to call and examine the stock and the products of the Dairy. With common butter at sixty cents a pound, will it not pay to keep a Cow that will produce two pounds per day, of superior butter? Address

THOMAS FITCH, New London, Conn.

Alderneys for Sale.

Cow, fawn color, deep and rich milk; heifer, yellow, little white, from stock imported by George Bird, both large and handsome, also a superior Bull calf, two months old, pure Ayr, dam and sire of both cow and calf, imported by Richardson. Call on or address G. W. FARRIE, at Cresskill, Bergen Co., N. J., (on Northern R. R. of N. J., 17 miles from New-York.)

CHESTER WHITES.

The subscriber, the original shipper of this popular breed of swine continues to fill orders from his extensive stock and other well selected and premium stock on reasonable terms. Send for a circular embracing all necessary information for breeding and management. Address,

THOS. WOOD,
Doo Run, Chester Co., Pa.

Premium Chester White Pigs

will be furnished by the subscribers, either singly or in pairs (not alike), and sent by express to any part of the United States, Canada, or South America. For particulars send for Circular. Address JAMES YOUNG, JR. & CO.,
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PREMIUM CHESTER WHITE PIGS for Sale.—
Sent by Express to all parts of the United States. For Circulars and Prices, Address N. P. BOYER & CO.,
Cam Tree, Chester Co., Pa.



Bee-Keepers' Manual.—
SENT FREE OF CHARGE to any address. This is a practical pamphlet. See June Agriculturalist. Agents Wanted in all unoccupied territory, for the Improved Movable Comb Bee-Hive. "The Bee-Keepers' Text Book," and "Italian" Queens. Address H. A. KING, Nevada, O.

Plata Ducks, Fancy Fowls and EGGS for sale, bred and selected entirely from imported stock. A. M. HALSTED, 68 Pearl-st., New York.

HALSTED BROS. & PUTNAM
68
Pearl-Street,
NEW-YORK.

Produce Commission Merchants,

FOR THE SALE OF

BUTTER, CHEESE, LARD, EGGS, PORK, HAMS, HOPS, APPLES, DRIED FRUITS, WOOL, BEANS, SEEDS, POULTRY, HONEY, GAME, &c., &c.

Send for WEEKLY PRICE CURRENT, Marking Plate and Circular with Packing and Shipping directions. Country Consignments receive special attention.

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Hon. J. K. Porter,
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GIBBS & THOMSON,

Unionville, S. C.,

offer their services in the capacity of Agents for the sale of Patent Medicines, Sewing Machines, Agricultural Implements, Books, Seeds, &c., also as Agents for Nurseries and Agricultural Papers.

Refer to R. I. GAGE, Unionville, S. C.

Hard Rubber Garden Syringes.

The very best article made, and much more pleasant to use than metal. Each syringe is packed in a wood box and can be sent to any part of the country by express. Price \$1 each. For sale by, SHEPARD & DUDLEY,
153 William-st., New York.

RUBBER CLOTHING CO. }
315 Broadway, New York.
81 Lake-st., Chicago.
115 Montgomery-st., San Francisco.

IONA and ISRAELLA GRAPES.

These two kinds greatly surpass all others in their assemblage of excellences for all purposes, and my attention in propagating will hereafter be chiefly devoted to these.

My establishment which was heretofore the most extensive as well as the oldest in the country, has been greatly enlarged and improved this season, for the express purpose of producing the best possible Vines to meet all of the various wants in planting.

Persons interested are invited to visit the Island, and inspect the Vines during every stage of their growth, and note the manner of producing them.

A New Edition of the MANUAL will be published in July, and also a new Price List and Descriptive Catalogue.

My assortment, in addition to the above mentioned, comprises all of the valuable varieties, including remarkably fine plants of Allen's Hybrid, Rogers' Hybrids, Delaware, Diana, Adirondac, etc.

The Vines of the Iona Establishment have generally been acknowledged to be the **Chenest**, *quality considered*, as well as the **Best** that have been produced, and the present stock gives promise of more than maintaining their former superiority.

For full account of these new Vines and their history and advantages, see Pamphlet, which is sent to all applicants for two-cent stamp.

C. W. GRANT, Iona,

(near Peekskill), Westchester Co., N. Y.

VINES

of a superior quality are grown at the Canandaigua Propagating Establishment. Dealers and Planters are invited to call and EXAMINE our Vines or send for Price List.

F. L. PERRY, Canandaigua, N. Y.

VINELAND

FARM AND FRUIT LANDS, in a mild and healthful climate. Thirty miles south of Philadelphia by Railroad, in New Jersey, on the same line of latitude as Baltimore, Md.

The soil is rich and *productive*, varying from a clay to a sandy loam, suitable for Wheat, Grass, Corn, Tobacco, Fruits and Vegetables. This is a *great fruit country*. Five hundred Vineyards and Orchards have been planted out by experienced fruit growers. Grapes, Peaches, Pears, &c., produce immense profits. Vineland is already one of the most beautiful places in the United States. The entire territory, consisting of forty-five square miles of land, is laid out upon a general system of improvements. The land is only sold to actual settlers with provision for public adornment. The place on account of its great beauty as well as other advantages has become the *resort of people of taste*. It has increased five thousand people within the past three years. Churches, Stores, Schools, Academies, Societies of Art and Learning, and other elements of refinement and culture have been introduced. Hundreds of people are constantly settling. Several hundred houses are being constructed, and it is estimated that five hundred will be built during the summer. Price of Farm land, twenty acre lots and upward, \$25 per acre. Five and ten acre, and Village lots for sale.

Fruits and Vegetables ripen earlier in this district than in any other locality north of Norfolk, Va. Improved places for sale.

Opportunities for all kinds of business, Lumber Yards, Manufacturing, Foundries, Stores, and the like.

For persons who desire mild winters, a healthful climate, and a good soil, in a country beautifully improved, abounding in fruits and possessing all other social privileges, in the heart of civilization, it is worthy of a visit.

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From Report of Solon Robinson, Agricultural Editor of The Tribune: It is one of the most extensive fertile tracts, in an almost level position and suitable condition for pleasant farming that we know of, this side of the Western Prairies.

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Acres, Franklin Tract, at Newfield, Gloucester County, New Jersey, on the Railroad running from Philadelphia to Cape May, 30 miles South of Philadelphia—adjoining the Vineland Tract, and 2 miles North of the Vineland Station—for sale at low prices and on easy terms, in lots to suit purchasers. Circulars, with reports of Solon Robinson, Hon. William Ferry, and others, with full information, sent to applicants free. Address JOHN H. COFFIN & CO., Newfield, Gloucester Co., N. J. Improved Farms also for Sale.

600 Maryland and Virginia Farms and Timbered Lands.

Catalogue of Maryland and Virginia Lands, with Geographical description of Maryland, for sale by R. W. TEMPLEMAN & CO. Land Agents, 87 Lexington-st., Baltimore City, embracing a description of the soil and products of Maryland. Sent 25 cents for a copy of Catalogue.

NEW STRAWBERRIES.

Ripawam.—At the great Strawberry Show, of the American Institute, held last June, in this city, the new Seedling **Ripawam**, took the first prize, over all other varieties, for the large berries. The exhibition consisted of over 100 varieties. The Agriculturist was shown in great perfection, but the committee of judges consisting of Charles Downing, of Newburgh, Isaac Buchanan, of Astoria, L. I., and Prof. Huntsman, of Flushing, L. I., decided that the **Ripawam** was entitled to the first prize. In this remarkable Seedling seems to be another advance toward a perfect berry. The plant is very strong and hardy, and wonderfully productive, over 500 berries have been counted on a single plant, the berry of monstrous size, a brilliant scarlet color. It will bear carriage better than any variety I know of, and will not change its beautiful scarlet color for days. It is believed that this variety will surpass all other kinds for market purposes. I shall be ready to deliver plants in rotation as ordered, after the first of August, at the following rates: 12 plants, \$2.00; 50, \$6.00; 100, \$10.00; 1,000, \$90.00.

Ella.—A new Seedling of promise, ripening its fruit before any other kind, fruit large, very sweet, plant vigorous and productive, plants \$3.00 per dozen, or \$10.00 per hundred.

Huntsman's Emily.—A very large and productive, and beautiful variety, a Seedling of Prof. Huntsman, it should be in every good collection, plants \$2.00 per dozen; \$10.00 per hundred.

Golden Queen.—A monstrous berry, 6 inches in diameter, beautiful color, plant vigorous and very productive, the fruit commands a high price in market.

Knox's 700 has proved fine this season, plants \$1.00 per dozen; or \$5.00 per hundred.

New Jersey Scarlet.—This is a very early, and promising kind, fruit large and productive, plants \$1.00 per dozen; or \$2.00 per hundred.

Ida.—The productiveness of this variety is astonishing, fruit scarlet and showy, it will pay well for market purposes, plants \$1.00 per dozen; \$3.00 per 100; or \$30.00 per 1000.

Agriculturist.—This variety has given good satisfaction this season, berries even larger, and more productive than before, unquestionably one of the best market varieties, plants \$1.50 per 100; or \$10.00 per 1000. I have a large stock of plants of this variety.

Mead's Seedling has fruited very finely this season, berries very large, and of the finest quality, plants \$1.00 per dozen; or \$5.00 per hundred.

Victory.—A splendid new Seedling, fruit very large and very productive, color, bluish, distinct from all others, a valuable kind, plants \$1.00 per dozen; or \$5 per 100.

Lenning's White.—Very large, the best White berry grown, plants \$1.00 per dozen; \$3.00 per hundred.

100 other varieties, embracing many new ones from France and Belgium.

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By Mail, Postage Paid.

All Warranted of the first Quality.

	per pound.
Early White Dutch Turnip.....	\$1.00
White Strap Leaf do.....	1.00
Red Top Strap Leaf do.....	1.00
Long White Cow Horn do.....	1.00
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Yellow Aberdeen do.....	1.00
Yellow Finland do.....	2.50
Golden Ball (very fine) do.....	1.00
Improved Ruta-Baga do.....	1.00
Lain's do. do. do.....	1.00
Sklirving's do. do. do.....	.75

ALSO,

	per oz.,	cts. per lb.
White Spined Canebrakes for pickles.....	15	1.50
Green Curled Endive.....	8	2.00
Corn Salad.....	15	1.50
Hardy Green Lettuce.....	25	2.00
Brown Winter do.....	30	3.00
Yellow Summer Turnip Radish.....	15	1.50
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of recent importations, for sale by

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New Jersey Lands for Sale,
In Tracts to suit purchasers.
21,000 Acres of Superior Soil in One Body,
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Apply to E. WRIGHT, Elwood, Atlantic Co., N. J.
Also many thousand acres of Cranberry lands. Circulars or other information cheerfully forwarded.

Turnip Seed by Mail.

The following varieties, the quality of which can not be excelled, will be mailed *post-paid*, to any address in the Union upon receipt of price affixed:

	per oz.	4 ozs.	8 ozs.	pound,
Early White Dutch.....	10 cts.	35 cts.	60 cts.	\$1.00
White Strap Leaf.....	10 "	35 "	60 "	1.00
Red Top Strap Leaf.....	10 "	35 "	60 "	1.00
Large White Globe.....	10 "	35 "	60 "	1.00
Large White Norfolk.....	10 "	35 "	60 "	1.00
Yellow Aberdeen.....	10 "	35 "	60 "	1.00
Golden Ball (Robertson's).....	10 "	35 "	60 "	1.00
Large Yellow Globe, extra.....	10 "	35 "	60 "	1.00
Long White French.....	10 "	35 "	60 "	1.00
Long White or Cow Horn.....	10 "	35 "	60 "	1.00
Yellow Finland.....	15 "	45 "	80 "	1.50
Waite's Eclipse, fine.....	10 "	35 "	60 "	1.00
Orange Jelly.....	10 "	35 "	60 "	1.00
Improved Ruta Baga.....	10 "	35 "	60 "	1.00
Skirving's do.....	10 "	30 "	45 "	.75
Laiog's do.....	10 "	30 "	45 "	.75
Dale's Hybrid.....	10 "	30 "	45 "	.75
Packets for retailing, full size, per dozen.....				60 cts.
do. do. half size, do.....				35 cts.

Prices to dealers by the quantity will be given upon application.

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By Mail, pre-paid.

The following varieties, the very best in cultivation, will be sent to any address by mail, pre-paid, or by Express in large quantities. Seed and Nursery Catalogues to any address, gratis. Wholesale Catalogues are now ready for the Trade. Agents wanted. 5000 lbs. choice Cabbage, Parsnip, Beet, Carrot, Turnip, and all other garden Seeds.

Price, 10 cents per ounce: \$1 per pound.

Early White Dutch.....	autumn and early winter.
Red Top Strap Leaf.....	" "
Orange Jelly or Golden Ball.....	finest yellow, "
Long White French.....	or Hanover, "
Skirving's Improved Ruta-baga.....	" "
German Teltow, (fine).....	" "
New White Sweet German.....	" "

The finest of all Winter Turnips, very late keeper, extra.

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OUR NEW DWARF CELERY

Has proved so much superior in flavor, ease of culture and hardiness, that for the past 5 years we have grown it to the exclusion of all others. We plant 40,000 per acre, averaging even in the markets of New York, \$3 per 100.

Strong plants now ready. Price \$1 per 100; \$7.50 per 1000; \$50 per 10,000. Carefully packed to ship to any part of the United States. Plain printed directions for its culture and winter preservation accompanying each package.

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The cheapest and best Fertilizer in the world. Fish Guano is composed wholly of the Flesh and Bone of Fish, and contains a larger proportion of Phosphate of Lime and ammonia than any other manure. In many parts of the country it has entirely superseded the use of Peruvian guano. Where its remarkable effects upon the growth of vegetation become known, it is the article most sold to promote the growth of Tobacco, Grass, Potatoes, Corn, and all kinds of cereal grain. It is an indispensable Fertilizer for gardens and Nurseries. It is manufactured by the MYSTIC OIL COMPANY, and sold in quantities to suit purchasers.

Price, \$30 per Ton for Dry, in Barrels at the Factory, or delivered on the Cars.
" \$35 per Ton for Green, do. do. do.
" \$30 per Ton for Green, in bulk at the Factory.
All orders promptly attended to by
E. W. BRIGHAM, Mystic Bridge, Conn.

BONE

For Sale by the Manufacturers. Pure Bone Dust and Fresh Bone Superphosphate of Lime. Address
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Ceres Mills, Newark, N. J.

AMMONIATED PACIFIC GUANO.

The attention of Farmers and Agriculturists is called to this article, as superior to anything else offered in the market. Equal to Peruvian Guano, and costing much less.

We offer this fertilizer in lots to suit all purchasers. A liberal discount made to the Trade.

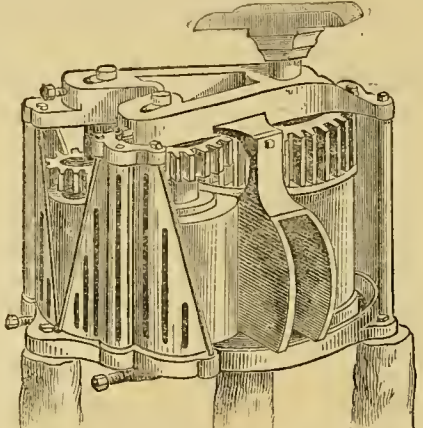
Pamphlets with copies of Analysis by Dr. Liebig, of Baltimore, and Dr. Jackson, Massachusetts State Assayer, and testimonials from Agriculturists, showing its value, and directions for use, can be obtained from
J. O. BAKER & CO., SELLING AGENTS,
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A Plain Talk.

By the use of a poor Cane Mill, persons often lose enough in a single season to pay for two good Mills.

1st.—By not pressing out the juice thoroughly, and
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All this can be avoided by using



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Thousands of them have been tested in eighteen different States. At seven State Fairs and many County Fairs it has received the **FIRST PREMIUM**, and among them last fall was the Illinois State Fair, where there were 22 competing first class Mills. It has lapped gearing which enables us to dispense with the "dumb return," thereby saving one-third the power, and avoids choking. MASTER ROLL FLANGED, DIAGONALLY BRACED, OIL-TIGHT STEEL BOXES, MOVABLE SWEEP CAP, SPRING SCRAPERS, JUICE CHANNELS IN BOTTOM PLATE, PERFORATED FALSE PLATE FOR PREVENTING BAGASSE FROM DIPPING UP THE JUICE.

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HUNT'S Patent Sugar Separator, will separate from 5 to 7 pounds good sugar from granulated Sorghum Syrup.

Price \$50 and \$60 each.

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☞ Circulars free to all applicants.—For ten cents will send post-paid, a sample of sugar, or for 25 cents, will send a pound by express, you to pay freight when delivered to you.

WANTED—\$500,000,

For which we invite orders for PORTABLE or STATIONARY ENGINES, CIRCULAR SAW MILLS, FEED'S & BECKING'S PATENT PORTABLE FRENCH BURN GRIST MILLS and BOLTS, SUGAR-CANE MILLS and SUGAR PANS. Our works are the oldest and most extensive in the country. All of our machinery is of modern construction and guaranteed.

Our portable mills are so complete and perfect that our millwrights erect and set them to sawing in two days' time. Orders promptly filled, and deliveries made in any of the principal cities of the United States.

For information or illustrated circulars, address
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A. N. WOOD & CO.
EATON, MADISON CO., N. Y.,
Continue to manufacture their Improved
PORTABLE ENGINES,
For Farm and Mechanical purposes. They are particularly adapted to driving Threshing Machines, Circular Saws, Mills of all kinds, Printing Presses, Wood or Iron Lathes, Machinery in Cabinet or Wagon Shops, Boring Artesian Wells, Pumping Water, Corn Shellers, &c., &c.

We warrant our Engines to be what we represent them, and to give unqualified satisfaction in all respects.
A. N. WOOD & CO.

First in the Field,

First in merit, and First in the estimation of all scientific Sorgo Cultivators, is



COOK'S SUGAR EVAPORATOR.

It has been before the public since 1853, has endured every conceivable test, and where the accompanying directions have been followed, has NEVER BEEN FOUND WANTING. Of

12,000 IN USE!

all fully warranted, not one has been returned.

Sorgo Conventions recommend it.
State Fair Committees recommend it.
County and local Societies recommend it.
Agricultural Editors recommend it.
Those who have used it, recommend it.

It is the most rapid Boiler. It saves fuel.
It saves time. It saves money.
It defecates thoroughly. It requires no chemicals.
It may be portable. It may be stationary.

It has taken the First Premiums at 40 State Fairs; 2 United States Fairs, and at County Fairs without number.

As the hurried season is just upon us, those who would not be disappointed in procuring an Evaporator, should order immediately, as by their own delay hundreds of late orders yearly remain unfilled.

Sorgo Hand Book sent free.
BLYMYER, BATES & DAY,
MANSFIELD, OHIO.

THE JOSEPH HALL
AGRICULTURAL WORKS,
GLEN & HALL, Proprietors,
ROCHESTER, N. Y.,

Manufacture the justly celebrated **FIRST PRIZE**
HALL THRESHING MACHINES,
With Planet, Cary, Hall and Woodbury Horse Powers; COL- LINS' COMBINED CLOVER THRESHER, HULLER and CLEAN- ER, &c., &c.

As an evidence of the superior quality of our work we may state that the Hall Threshing Machine exhibited last year at the State Fairs of Illinois and Michigan, in competition with the machines of Buffalo, Massillon, Chicago, and other leading builders, was on both occasions unanimously awarded the **FIRST PRIZE** at the latter Fair, an *actual trial* under the direction of the Society being had.

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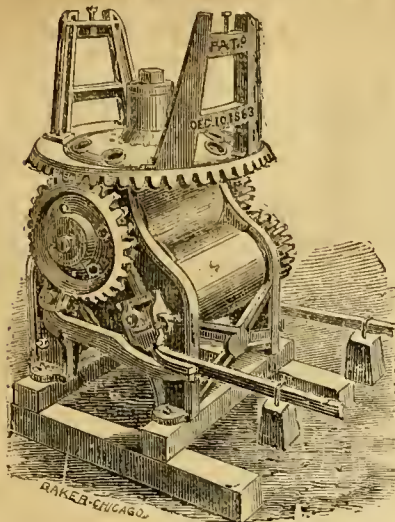
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Set in Patent Protector and Guide. For sale by JOHN DICKENSON, Patentee and Sole Manufacturer, and Im- porter of Diamonds for all Mechanical purposes. Also Man- ufacturer of Glaziers' Diamonds, No. 61 Nassau-st., New- York City. Old Diamonds reset. N. B.—Send postage- stamp for Descriptive Circular of the Diamond Dresser.

\$100 will buy a Brick-Machine, which is warranted to be substantially made and capa- ble of making 15,000 brick per day of a better quality than by hand. Address FRET, SHECKLER & CO., Bucyrus, Ohio.

SKINNER'S PATENT



SORGHUM MACHINERY,

MANUFACTURED BY

E. W. SKINNER & CO., Madison, Wis.

(S. D. HASTINGS, E. W. SKINNER, AND O. S. WILEY.)

THE ONLY REALLY ADJUSTABLE CANE MILL!

Long Tried and Well Liked!

FIRST PREMIUMS AT ALL NORTHWESTERN STATE FAIRS

HIGHEST ENCOMIUMS
FROM PRESS AND PUBLIC EVERYWHERE!

THE BEST IS THE CHEAPEST!

THE LEVER PRINCIPLE IN OUR MILLS IS the only practicable and reliable mode yet applied for giving adjustability to Sugar Cane Crushers, and the lever and weight is, and must always be, the simplest and most unvarying power. With it the cane is pressed drier with less power and less liability of breakage than by any other mode. These Mills have been before the public for several years; they are extensively used throughout the entire sorghum growing sections of the country, and wherever used have invariably given entire satisfaction. They have been much improved for the present season, and now embrace points of excellence, aside from the leading feature of the lever, which of themselves place them far ahead of any other Mill in use. We build Mills of different sizes, geared to run by steam, water or horse power; also premium Horse Powers, very simple in their construction and of great strength; also an Evaporator of our own planing, equal if not superior to anything now in use; and in fact, every article required by Sorghum Manufacturers.

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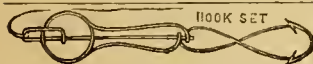
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THE PREMIUM MACHINE.

Best in America.



The Railway Horse Power that is unequalled for ease of team, amount of power. The Combined Thresher and Cleaner that **Cleans equal to any Fanning Mill**, fit for Mill or Market. Threshers, Separators, Fanning Mills, Wood Saws, Seed Sowers and Planters, &c. All of the BEST in market. Send in orders early, as we are governed by "first come, first served." For further information send for Circular. Address **R. & M. HARDER,**
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open in the fish's mouth. Best spring hook ever devised. Will send two Hooks on receipt of 30 cents; or one dozen, for \$1.25. Address **JOSEPH BRIGGS,** 335 Broadway, N. Y., Room 33, who is also General Agent for the celebrated

Patent Animal Fetters

For Horses, Mules, and Cattle. Price \$2.00 each, \$18.00 per dozen, 1/2 or 1/3 dozen to try them. Cash with the order at rate. See engraving in February number.

BEE HUNTER.—A Box to hunt Bees with, full directions how to use sent free on receipt of the price, 60 cents.
B. OLOTT,
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The Lamb Family Knitting Machine.

The Lamb Knitting Machine Company, Springfield, Mass., hold the exclusive right to manufacture, sell and use this Machine in the following States: New York, (all East of the Counties of Cayuga, Seneca, Schuyler and Chemung,) Maine, New Hampshire, Vermont, Rhode Island, Connecticut, New Jersey, Pennsylvania, Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia and Alabama.

The Machine manufactured by this Company received the highest premium, **A GOLD MEDAL**, at the Fair of the American Institute, in New York, and at the Exhibition of the Mass. Mechanic's Charitable Association, Boston. It has also taken the highest premium at all the various State and County Fairs where it has been exhibited, eclipsing all others. It is really the only Family Knitting Machine invented, as no other has a range of work that entitles it to be called a Family Machine.

For Stockings, as it knits the heel and narrows off the toe, making any size required, it is the greatest labor-saving Machine ever brought before the public, being in this respect far in advance of its great rival the Sewing Machine.

It knits any and everything in the way of Fancy and Staple worsted articles that the ingenuity and taste of the operator can devise. Every Machine warranted perfect.

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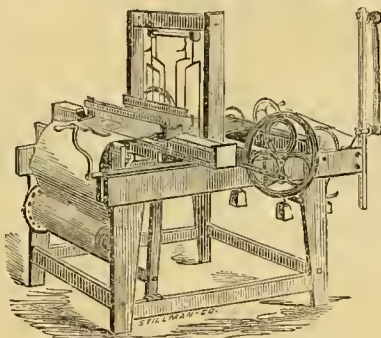
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Patented March 27th, 1866.

The most practical, money making, and money saving machine ever invented for family use

We can not give details in an advertisement, but can convince any one, who wants a Loom, that we have the **best and only perfect Hand Loom**. Send for Descriptive Circulars, samples of cloth woven on the Loom, and full particulars. Address (with stamps)

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Clothes Washer

is easy to operate—sitting or standing—injures no garments, and does its work to perfection in from two to four minutes; is durable, and is the only washing-machine that is **LIKED**.
THE BETTER THE LONGER IT IS USED.
Recommended as the VERY BEST,

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Prices, Family Size, \$14. Hotel Size, \$16. A sample will be sent free of freight on receipt of retail price.
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32 Courtland-st., New York,
(opposite Merchant's Hotel).



The Universal

Clothes Wringer,

WITH

COG-WHEELS,

Fits any wash-tub, wrings clothes almost dry with little labor, and will save its cost in clothing every year.
The Washer and Wringer have taken the first premiums at the great fairs of Europe and America.
Send for wholesale and retail terms, also descriptive circulars.

Exclusive right of sale given to the first responsible applicant from each town.

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The **Union Mower** is pronounced by those who have used them to be the **best** in use.—All Machines warranted Agents wanted for the **Union Mower, Clement's Improved Horse Hay Fork, Whitcomb's Wheelbarrow Hay Rake**, and other implements. Where no agents are appointed, we will allow to **Farmers** the full discount. We will sell the Machines at low prices for **Cash**.
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IMPROVED SELF-ACTING

HAND-LOOM

Is the most Simple, Durable and Reliable Loom ever invented, and is the **ONLY Self-Acting Loom** that has **NEVER** failed to give entire satisfaction. It makes as **OPEN a SHED** as any other Loom, and will weave goods on Woolen Warps equally as well as on Cotton Warps.

For descriptive Circulars and samples of weaving done on the Loom, address, with stamp,

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CINCINNATI, OHIO.

Or,

A. B. GATES & CO.,

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Useful, Strong, Good, Self-adjusting, Portable and Folding Patented May, 1866. This fence commends itself to every Farmer as it readily adjusts itself to all inequalities of the ground, is quickly set up, can be folded and hoisted, when not in use. It can also be used as a Grand Trellis in Gardens, or Vineyards; on the steepest side hills. Farm Rights, with Diagram Circular, Five Dollars; or, for Ten Dollars we will send a Farm Right, 32 hooks, 32 eyes, with nails and screws sufficient for 8 lengths or panels of the fence. For further particulars, or for State, County, or Town Rights, Address F. W. JENNINGS & Co., Proprietors, Box 230, Post Office, Williamsburgh, N. Y. Send for Circular.

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HAY AND COTTON PRESSES.

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A substantial Board Fence, convertible at pleasure into rain-proof Shelters, Sheep-Sheds, Cattle Barracks, Hay-Caps, Barns, Huts, &c. "Quite simple; extremely useful,—does double duty."—*Scientific American*. (See engraving in June *Agriculturist*.) Rich in sale. Send for Circular.
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WITH

Compound Mineral Cement.

Applied with a common trowel it will fill up crevices, and stop leaks around chimneys, Dormer windows, &c.

Price 5 cents per pound in 50 and 100 pound boxes.

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Manufacturer of

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Plastic Slate for Roofing and other Purposes.

The discovery has been made, that pulverized Slate rock being mixed with viscous matter and spread upon any surface exposed to atmospheric action, solidifies and slowly recedes into the perfect state, without shrinkage or expansion. That from the moment it is spread it is non-absorbent and impervious, non-combustible and undecaying, and therefore is the best possible covering for roofs, Vessels, Vaults, Walls of Stone, Brick, Mortar, or Timber, in the water, the ground, or the air.

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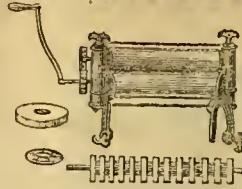
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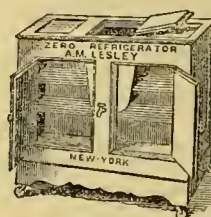
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A new and genuine preparation of PURE SILVER, for cleaning and polishing Silver and Silver Plated Ware, and for Silver Plating articles of Copper, Brass, German Silver, &c., by the use of which every one can give the appearance of solid Silver to all articles made of above metals, which they will retain permanently with an occasional application. It restores the plating where worn off, by a single application, and will be found one of the most valuable articles ever produced for the many thousand articles to which it can be applied to advantage. This article is different from all others ever produced for similar purposes as it does not contain Mercury nor any acid, nor any property injurious to metals or the hands.

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Is the best Refrigerator yet invented for keeping Meats and Fruits from spoiling in hot weather.

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Garments made to Order at Short Notice.

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NEW-YORK, AUGUST, 1866.

NEW SERIES—No. 235.



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SWANS IN BROODING TIME.—ENGRAVED FOR THE AMERICAN AGRICULTURIST FROM A DRAWING BY EDWIN FORBES.

Every one who visits New York City of course goes to the Central Park. The beauties of this pride of New Yorkers culminate in a large lake, spanned by airy bridges and margined by picturesque banks. The beauty of the scene is enchanted by the numbers of swans which glide along the surface, arching their necks with all the grace that we have seen represented in pictures. One in seeing a swan for the first time, is not disappointed, for in this case, at least, the real thing equals our preconceived idea. Nothing adds so much to the attractiveness of a piece

of water as these birds. The pure whiteness of their plumage, the majestic leisure of their movements, and the always graceful carriage of their long necks, have made them everywhere favorites. To see these usually meek and gentle birds, in other aspects, one should watch them at brooding time. The female chooses some isolated place for her nest; an island is usually preferred. The nest is a rude affair, built of straw, reeds and the like, and in this from five to eight eggs are laid.—The mother bird sits for six weeks, and during all this time the male or

Cob keeps most vigilant guard. From being a quiet and peaceful bird, he is the one of the most pugnacious, and always on the look out for a fight. Our artist has taken his picture just as the young brood is hatching, and has admirably given the motherly expression of the female as well as the fierce and war-like attitude of the male. He is constantly sailing around in the vicinity of the nest, and is ready to attack any other who approaches his domestic circle. The young swans are at first of a slate color, and it is three years before they get their full plumage.

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AMERICAN AGRICULTURIST.

NEW-YORK, AUGUST, 1866.

Agricultural operations, especially out-of-door work, depend to a great extent upon the weather. In the early part of the season field labor was much interrupted by rains and cold storms, which prevented the early working of the land, and crowded work very much into June, so that whatever could be postponed until July was so put off, in many parts of the country. The result is, that while grain has generally been promptly harvested when in the best condition, a good deal of grass has been left to get over ripe and wirey before being cut. To the careless farmer there is a gain in this delay, for the older the grass the quicker the hay will make; but few realize how much poorer the quality is. There is reason still to expect great heat, such as we experienced in the last of June and the first of July, and if so, the provisions made for soiling cattle will be of great value. We cannot too often insist upon the practice, now happily becoming much more common than formerly, namely, that of sowing corn, sugar-cane, millet, and perhaps also other summer crops, like ruta bagas, or rape, to be used for this purpose when pastures run short. There are several things that can be sowed for fall feed now, which may come in most opportunely—such as oats, rye, sorghum, ruta-bagas, etc., sowed thick for leaf only. The pasturage may also be "pieced out" to good advantage, by feeding some dry hay which will ordinarily be relished by all kinds of stock, especially if it be cut up, salted a little, a handful or two of meal or oil-cake for each animal, sprinkled over it, and the whole moistened well with water and allowed to stand a few hours.

The dry season gives opportunities to get into the muck and peat swamps, which in the lull of field work upon the staple crops should not be neglected. The recent perusal of Prof. Johnson's admirable work on Peat and its Uses, impresses us more perhaps than ever before with the great stores of fertility locked up in our swamps and quagmires, waiting only enterprise to develop and to enrich with them the exhausted acres which on thousands of farms lie closely adjacent. The system of operations is first to find the lowest place and best outlet; then to dig trenches to drain the swamp, or part of it, making first the main ditches, open and flaring, then the lateral ones, leaving the muck which is thrown out exposed to the weather until it becomes dry and crumbles, unless the sun bakes it into too hard cakes, in which case, when partially dry, beat it to pieces and lay it up in compost heaps, with lime slaked with old brine. Such muck will be dry and ready for use in the stables as an absorbent in winter. That which is not so treated, will be disintegrated by frost for use in the spring.

It often happens that the work of this season is such that it may be left a good deal to the hired men, and thus the time gained for a few days of relaxation. Nothing is more beneficial. A trip to the sea-side, when a few neighbors make up the party, and enjoy sea bathing, fishing, clam bakes, and chowders; even a day of fishing and out-of-door sports in the woods with one's family and a few friends is worth a great deal for health and good spirits. We often hear it said that we make too little of holidays and have too few in this country, and it is true. Farm work will go better and one's interest in his farm, his family and in life itself is heightened, and made generous and healthy by occasionally giving up a few days to enjoyment, and having a real good time.

Not the least reason for occasional relief from the pressure of business and labor may be found in the sanitary condition of the country. There is no little anxiety at the time we write in regard to the cholera, which seems to be held off, under God, only by the strong sanitary police regulations maintained at our ports of entry. It is therefore the bounden duty of everybody to keep himself so far as possible in a condition of health, not to over-work or get exhausted in body, or foolishly anxious.

The women of the farm who, in the generosity of their hearts, often bid city cousins welcome to the best they have, and slave themselves almost day and night to serve them, are in more danger of over-working than anybody else, and husbands and fathers should quietly regulate this matter by planning excursions or visits, which shall break up the too long stay of labor-making guests, and give their wives and daughters pleasure and relief from the severe burdens of their confining duties. Perhaps you have never been invited to spend a fortnight in January with your consins in Boston, New-York, or Philadelphia, who visit you so gladly every August. At any rate you owe no one hospitality which will endanger the health of your family.

Hints about Work.

Bushes and Weeds.—August is a season for the most effective and deadly onslaughts upon weeds and bushes. The nature of most weeds is in the first part of the season to make tops, and afterwards to concentrate their energies either upon the production of seed or maturing their roots, so as to live through the winter. If cut in this dry hot weather, it is usually certain death. Even Butter-and-Eggs (*Linaria*), that most showy and detestible of weeds, is sometimes killed by thorough hoeing up in an August drouth. As for bushes, once cutting up, and then letting the sheep browse off the young shoots, will make an end of the worst, even wild roses, and blackberry bushes. Do not let any weeds go to seed. The season has been particularly favorable to crops of weeds, and without proper diligence it will take years to do away with the harm that may be done, if they scatter their seeds.

Seed Grain.—Look out early for a good supply of clean plump seed, especially for that to be used this season. Clean it thoroughly from all shrunken kernels and weed seeds by repeated winnowing, using if possible the arrangement described on page 138 (April), which is applicable to all kinds of grain and grass seeds.

Buckwheat may be sowed now and make a good mass of green manure, to be plowed under in time for sowing rye, or for enriching the ground for spring crops, and with a chance for a crop of grain.

Timothy sowed alone will, on good soil quickened with a top-dressing of bone, guano, or any fine rich compost, usually catch well, and sooner make a good sward than that sown with spring grain, or upon winter grain in the spring.

Wheat.—If the soil be dry in winter and in good heart now, plow early, and giving a top-dressing of some good fine compost, or special manure, drill in the wheat. It is poor policy to risk winter wheat on soil which, from lack of draining, barely allows the plants to struggle through.

Oats.—Harvest before too ripe, and thus have much better straw, more and plumper grain.

Corn.—It is a great temptation sometimes to sucker corn for the sake of getting green feed for cows. We do not believe in suckering corn at all, though with some kinds it may have no evil effects. With many varieties we feel sure that the suckers are important to secure the proper filling out of the tips of the ears, the tassels coming into flower a little later than those of the main stalks, the later maturing tip kernels of the ear, are thus fertilized. Pull weeds among corn, but do no hoeing after the ground is shaded.

Tobacco begins to ripen for cutting by the middle of the month, if properly topped and suckered. When about 12 to 16 leaves have formed, and the flower stalk begins to push up rapidly, clear of the mass of large leaves below, then it should be broken off. The height will vary with the vigor of the plant, and the earliness or lateness of the season. The leaves increase rapidly in size after this, and suckers will start from the base of each, which must be broken off. The worming must go on all the time; and so vigorously do the suckers grow, and so active are the worms, that a few acres will give very steady work during this month to several

Post-Office Money Orders—Improvement.—The new law allows \$50 to be sent in one Order. The charge is ten cents for any sum up to \$20, and 25 cents for any sum over \$20 up to \$50. For over \$50 it is merely necessary to take more than one order. New Order Offices are being established. This system is of great value to the whole country, and amounts to positive safety in transmitting moderate sums of money by mail, by paying about 1/4 of one per cent.

hands, even after all haying is done. When the leaves have their full growth, and have that turgid and mature look and feel, difficult to describe, cut up at the roots in the middle of the day, turn frequently till wilted enough to handle without breaking, and then hang in airy sheds.

Cotton Picking is an important labor at the South this month; too great importance can not be given to clean picking, and leaving the bolls light and soft. There has been a machine invented for picking cotton, and we are inclined to think that here is a particularly good opportunity for the profitable display of mechanical ingenuity, for it can hardly be that the first machine will be any nearer perfection than the first sewing or mowing machine.

Stacks.—If hay or grain stacks settle, re-top them, building them up square and guard against rain.

Water.—There is no more important subject than the supply of fresh and pure water for the stock in the pasture and in the yards, the lack of it cannot be made up by the best of feeding and other care. It is very bad to be obliged to drive cattle far for water. Young calves and cattle are often seriously stunted by a short supply of water in August.

Weaning Young Animals.—Colts, lambs, and calves, left to take their regular allowance of milk naturally, should be weaned about this time, say when 3 or 4 months old. The colts being put in enclosures away from their dams, and allowed to suck at first twice a day, then once a day, then less often, and finally once a week for once or twice, thus they will be weaned quietly and without falling off in flesh through running to and fro in their anxiety. Lambs must be weaned abruptly, and to make it easier for both parties, separate them beyond the sound of each other's bleating, leaving the lambs in the old pasture. Give the ewes very dry feed, and milk those whose udders appear distended and tender. Put two or three old tame ewes or wethers with the lambs as leaders, and to make them manageable. Calves are very easily managed, being allowed to suck only while the cow is being milked, and that but once a day after a few days. The milker can restrict the allowance of milk that the calf gets at his discretion.

Cows.—Use all diligence to prevent the cows drying, giving good pasturage, extra feed if necessary, and plenty of pure water. Farrow cows to be fattened this fall, should be dried off before September, and kept in good flesh, being fed so as to be on the gain all the time.

Oxen.—Be careful not to over-work and exhaust working cattle. If put to hard labor, feed dry hay, and bright straw with bran upon it, in addition to what they pick up nights in the pasture.

Horses need careful treatment, and if kept up should have an armful or two of grass daily, and if worked hard, cut feed and dry hay. Cold water is perhaps the best application for galls by the harness; and do not forget that for all kinds of stock

Salt and Pure Water are essential to their health.

Swine.—Keep them making manure; weeds and all sorts of rubbish which will decay, should be thrown to them to work over. Peas may be fed unthreshed, using such as may have been somewhat damaged, and thus the hogs will be in prime order when corn is fit to feed.

Sheep.—Keep far upon their noses to keep off the bot-fly, which causes grubs in the head; examine rams about the horns and heads and elsewhere for wounds, which soon become maggoty if neglected. Wash them out and apply very warm pine tar.

Poultry.—Give all kinds a share of the daily waste, butter-milk, lopped milk, etc. Collect eggs daily, keep in a cool place in close boxes, set on the points, and packed in Indian meal, bran, or slaked lime, inverting the boxes every two or three days. In the moulting season hens cease laying. Keep chickens well fed, and growing rapidly. Give scalded cracked corn, wheat screenings, Bromus grains, etc., with free run for green food and insects. See that fowls have clean and deep dust baths, in which a little quick-lime or wood ashes occasionally thrown will be fatal to lice. Whitewash roosts and nest boxes. See basket item about hen lice.

Manure.—Employ any spare time in looking about the neighboring villages or factories for valuable refuse that will pay for hauling. Leather scraps, woollen waste, slaughter-house offal, horn piths, hops and sprouts from the breweries, soapy and oily water from the cloth factories, which may be absorbed by muck or led out upon the grass. Save any choice finer manure from the bottom of compost heaps in the yard for wheat.

Tools that have been in use during the summer should be thoroughly cleaned, the steel parts painted with linseed oil, and set away.

Turnips.—Sow till the middle of the month in most places below latitude 40°, on ground well cleaned of weeds by repeated harrowing.

Wells.—When springs are low, it is the best time to dig wells. Have everything ready to dig, stone up and curb at once.

Orchard and Nursery.

There appears to be a good promise for apples and pears, but a general failure of peaches. We can not hear of any Eastern peach region where there is likely to be even a moderate crop. What shall we do for peaches? The peach region has been pushed down into Delaware and Maryland; must we look to Virginia and the Carolinas for our supply? It is not only the borer, the curl, and the yellows, but the rigor of our winters, and uncertainty of our springs baffle the cultivator. We have given several plans that have been proposed for protecting trees during their season of rest. Whoever hits upon a system of protection, easily applicable on a large scale, will find his account in it.

Marketing of early apples and pears will require care. Regular market growers know that a little time expended in preparing fruit for market will be repaid. It generally pays to make two qualities, to which may be added a third, fit only for the pigs. Establish a reputation for fair dealing, by having the baskets or barrels run of even quality throughout. Pick the fruit before it softens, but not before it is fully developed. Allow no beating or other rough usage of trees in order to get the fruit off. A self supporting fruit ladder is very useful, or a common ladder may be stayed by guy ropes.

Insects will still demand the attention. Fruit that has fallen because it contains the larva of some insect should be gathered up and given to the pigs, or those animals be allowed the run of the orchard. Late caterpillars' nests must be removed, and the borers treated as recommended in May, on p. 187.

Budding is to be done whenever the bark runs freely and well ripened buds can be had. See directions last month. Round off stocks budded last year.

Trees set last spring without mulching will often show signs of failing this month. Removing the soil around the roots, and giving a thorough watering, will often save them. After replacing the earth, put on a mulch.

Seed Beds are to be shaded as heretofore directed.

Layer wood of this year's growth as soon as it is firm enough. The soil into which layers are put should be rich and well worked.

Pruning should have been finished last month, but if any needs to be done it is not too late yet.

Evergreens with proper care to keep the roots from drying, and watering the holes if not already moist, may be successfully removed during this month. Select a damp time for the operation.

Weeds.—Keep them down everywhere, especially in nursery rows.

Kitchen Garden.

One should not in the enjoyment of the abundant products of the garden forget to provide for next year, in the way of seeds. This is often thought of too late, and after the best of the yield has been used upon the table. We have so often insisted upon the earliest and best for seed that it is unnecessary to repeat it. Some kinds of seed are best raised by large growers, but there are many sorts that every one can as well save for himself.

Asparagus will now only need to have the coarse weeds pulled up. If seed is wanted, collect it from the best plants. Some English cultivators strip off the flowers as they appear, believing that the root will be stronger if not allowed to bear seed.

Beans.—Plant some of the bush sorts for salting.

Beets.—Thin and use the hoe freely. A slowly grown beet is of poor quality.

Cabbages and Cauliflowers.—If slugs are troublesome, use lime or set traps, as suggested last month. Caterpillars are easily disposed of when they first hatch and before they scatter. Use the hoe frequently. Set plants for the latest crop.

Carrots.—Hoe and thin, and if young carrots are wanted, sow the Dutch Horn variety.

Celery.—Earth up the early plants. Set out for latest crop. Keep that set out in flat culture free of weeds by running the cultivator between the rows—and towards the middle or end of the month commence to draw the earth up to the plants.

Corn.—Select the finest and earliest ears for seed. Destroy the worm that feeds on the silk.

Cucumbers.—Gather for pickles when of small size.

Egg Plants.—Keep the fruit from the ground by putting a handful of hay or straw under it. If holes appear in the leaves, look under for caterpillars.

Endive.—Set out plants a foot apart each way. Tie up the older ones to blanch.

Herbs.—Continue to gather as they come into flower. Dry and put out of the way of dust.

Lettuce.—If sown during hot weather, should have the benefit of partial shade.

Melons.—Remove those set too late to ripen. If a vine is allowed to carry only three or four melons, the fruit will be all the larger and finer.

Onions.—When a majority of the tops fall over, commence harvesting. If the onions are to be stored for winter, dry thoroughly.

Potatoes.—Leave those wanted for seed until ripe.

Radishes may be sown, especially the Chinese Rose-colored Winter, which is tender and well flavored, and will keep as well as a turnip.

Squashes.—Continue to deal with insects as suggested last month. Save seed of early sorts. Let the running vines root at the joints.

Tomatoes.—Keep those grown upon trellises tied up. Thin out crowded branches. Look out for and destroy the caterpillar or "worm."

Turnips.—Thin ruta-bagas, and sow the round sorts in places left vacant by other early crops.

Weeds.—Use the hoe rake, bayonet hoe, push hoe, or some other weeding implement. A heavy steel rake is capital for loosening the surface, and if used often, will keep down the weeds.

Fruit Garden.

In the rapid ripening up of small fruits allow none to go to waste. Raspberries, currants and blackberries may be preserved in any kind of bottles or jars, with mouths barely wide enough to admit the fruit. Drying may also be resorted to.

Blackberries.—Stop the growth of rampant canes at a convenient height, else they will grow out of reach and bear less fruit.

Dwarf Trees.—Continue to thin the fruit. A little pinching now and then of shoots inclined to push unduly, will keep the tree in shape.

Grapes.—We have given in this and previous numbers all the proposed remedies for mildew. Provide some kind of bellows and be prepared to use sulphur or other dusting material. Keep tied up to the trellis or to stakes.

Raspberries.—Select the young canes that are to fruit next year, and give them the advantage by removing all others.

Strawberries.—Runners may be rooted in small pots and set in beds, where they will bear a moderate crop next year. Keep the runners clipped when close culture is followed. We have elsewhere described and illustrated the leading varieties.

Flower Garden and Lawn.

Keep the soil stirred this hot month; it will be found more beneficial than watering. Observe neatness, not only in keeping ahead of weeds, but in tying up plants that need it, removing spent flower stalks and all unsightly matters. Mow the lawn and grass edgings at least once a week; let no coarse weeds get established. Give summer clipping to box edgings and deciduous hedges.

Dahlias will need tying. Remove imperfect buds.

Fuchsias—The summer sun is hard on many varieties, and if any drop their foliage, prune them closely and they will push anew when the heat is less severe. Make cuttings for plants to keep through the winter.

Propagation of shrubs by layers may be continued. Cuttings of the new growth, shaded and kept moist, will take root. Make cuttings of such bedding plants as are needed.

Gladiolus stems are apt to fall over, and it is best to keep them tied to neat stakes.

Potted Plants need extra shade and water. Do not allow the earth to fill with weeds or moss. *Roses* are apt to be infested by insects. Use the syringe freely, with soap suds or tobacco water. Make layers. Keep the new growth of climbers properly trained up.

Coeus.—This brilliant "foliage plant" produces a much finer effect when grown compactly. Shortening the growth by a judicious cutting, will make it thicken up.

Seeds.—Select only from the best flowers, and gather as soon as ripe. All which burst their pods suddenly, like phloxes, pansies, etc., are to be taken before they are dead ripe, or many will be lost. Label every variety as soon as gathered. Seeds of perennials and biennials are generally best sown the same season in a reserve bed. They will give a stock of plants for next year's flowering.

Green and Hot-Houses.

Shading the plants that remain in the house, watering, and ventilating, must not be neglected. Provide for winter flowering plants by making cuttings and sowing seeds. Look to the stock now out of doors, and see that it does not suffer from dryness or from violent winds. Repairing and building should be done, and coal, pots, soils, and all necessary supplies laid in.

Cold Grapery.

When the fruit commences to ripen, watering is discontinued. Prevent sudden changes of temperature, as they will interfere with the proper ripening, but give free ventilation. When the crop is ripe, the upper ventilators may be kept open at night. In warm and damp weather, mildew is to be feared, and sulphur must be used as directed last month, and the air kept as dry as possible.

Apiary in August.

Some of the bee keepers who read the *Agriculturist* will find that their bees, having had many flowers and favorable weather, have filled not only all the combs where honey should be stored, but the proper breeding combs too, more or less. This will be almost sure to interfere with maintaining strong stocks for winter. It is, in such cases, desirable to shift combs, placing empty frames or brood frames, or frames of breeding combs in the center of such hives. The honey removed may be kept to feed weak stocks with, or used for the table. Others of our readers may, and, as we know very well, do, labor under no such difficulty, pasturage having been by no means abundant.

Boxes $\frac{3}{4}$ ds filled with clover honey must be removed before buckwheat comes in blossom, for if sealed with a thin layer only of the dark honey on the surface, it will all sell as buckwheat honey. The moths will be very active this month, and should be trapped and caught in every way. Sauces of sweetened water set near the hives at night will entrap many. The grubs may be found in the chips of wax and dirt that accumulate often upon the floors of hives and in the cracks and corners. In case there is any evidence of the existence of moth grubs in the surplus boxes after their re-

moval, and they may be discovered by little mealy streaks upon the combs, fill the boxes with fumes of burning sulphur.

As soon as buckwheat comes in bloom, give fresh surplus boxes; good stocks will often store 20 to 30 pounds. Remove boxes as soon as filled, or when the bees cease storing honey, and especially if they begin to carry it away. The comb grows darker the longer it remains on the hive. Do not leave on empty boxes, in which the bees do no work; they only soil the glass and smear up the interior with propolis.

Examine all stocks with reference to the healthiness and ability to winter well. Drive out sickly ones, giving the bees to weak stocks. Queenless hives may also have their bees, brood and stores divided, or be supplied with a queen, or brood comb, or both from other hives. Equalize stocks by changing hives from one stand to another, as frequently before described. If stocks are found with frames of drone combs in the middle of the hive, shift the frames to bring this upon the outside, and put frames containing small cells in the middle.

It is often desirable to breed Italian queens late in the season, because the drones are all killed off in common hives, and a supply of Italian drones being provided at home, the young queens will to a certainty be fertilized by them. To have a supply of late drones, remove the queen from a strong stock in a large movable frame hive, place in the hive drone comb containing grubs or sealed larvae from other hives, and remove after 8 days any queen cells that may be formed.

Commercial Matters—Market Prices.

The following condensed, comprehensive tables, carefully prepared specially for the *American Agriculturist*, show at a glance the transactions for a month, ending July 13, 1866, and the exports of Breadstuffs from this port thus far, since January 1:

TRANSACTIONS AT THE NEW-YORK MARKETS.						
RECEIPTS.	Flour.	Wheat.	Corn.	Rye.	Barley.	Oats.
21 days <i>this</i> month.	291,000	578,000	4,050,000	169,000	67,000	1,311,000
22 days <i>last</i> month.	252,000	283,000	1,686,000	47,000	81,000	518,000
SALES.	Flour.	Wheat.	Corn.	Rye.	Barley.	Oats.
21 days <i>this</i> month.	233,000	430,000	3,612,000	199,000	—	—
22 days <i>last</i> month.	271,000	807,000	2,138,000	174,000	43,000	—
2. Comparison with same period at this time last year.						
RECEIPTS.	Flour.	Wheat.	Corn.	Rye.	Barley.	Oats.
21 days 1866.	291,000	558,000	4,050,000	169,000	67,000	1,311,000
24 days 1865.	351,500	1,421,000	1,332,000	54,000	76,000	1,592,000
SALES.	Flour.	Wheat.	Corn.	Rye.	Barley.	Oats.
21 days 1866.	233,000	431,000	3,612,000	199,000	—	—
24 days 1865.	321,000	1,376,000	1,153,000	111,000	—	—
3. Exports from New-York, January 1 to July 13 :						
	Flour.	Wheat.	Corn.	Rye.	Oats.	
1866.	491,457	141,551	4,760,198	187,189	783,736	
1865.	731,000	819,429	4,873,729	111	48,227	
4. Receipts at head of tide water at Albany, each season to end of June :						
	Flour.	Wheat.	Corn.	Rye.	Barley.	Oats.
	bbls.	bush.	bush.	bush.	bush.	bush.
1866.	57,000	617,000	4,200,000	125,800	50,800	1,919,000
1865.	188,200	1,405,300	1,700,200	91,500	150,700	2,671,600
1864.	221,100	5,638,300	1,737,100	64,500	137,000	2,646,900

Gold advanced early in the month to 169 $\frac{1}{2}$, owing to the money crisis in London and the heavy exports of specie in May and the first two weeks in June. Subsequently, it declined to 146 $\frac{1}{2}$, rallied again to 157 $\frac{1}{2}$. It opened yesterday (July 12.) at 149 $\frac{1}{2}$, and advanced to 151 $\frac{1}{2}$. Influenced by the rise in gold, an improved inquiry prevailed for the leading kinds of Produce and Merchandise, partly on speculative account, at advanced prices. The break in the Erie Canal temporarily aided holders to work up quotations to a higher range, especially for Breadstuffs. Since the canals have been repaired, produce has come forward largely, and as gold has fallen off, receivers have been forced to make some important concessions. Corn is arriving in enormous amounts (reaching in some days 700,000 bushels, and seldom less than 150,000 bushels,) and is finding eager buyers, in part on speculation. It is coming into market in remarkably good condition. Rye and Oats are also being moved to the seaboard in large amounts, and are meeting a ready market, but at declining figures. Flour and Wheat are not plenty, and are held with comparatively more firmness. Sundry lots of new wheat have been received and sold,—the latest and choicest were disposed of yesterday to a city miller. It was a lot of about 1000 bushels very choice new amber Jersey, which brought \$3 a bushel. There is a great scarcity of prime wheat which embarrasses matters very much indeed. Provisions have been in less active demand, and have been depressed in price. Butter and Cheese are plenty; the former is dull and drooping, and the latter is wanted

partly for export and for southern use, at steady figures. Cotton has been unusually quiet at reduced prices, closing 33c@37c per lb. for middlings.—The available supply now here is estimated at 125,000 bales; and at all the shipping ports of the country, at 297,000 bales. Wool has been in more request for manufacturing purposes, at full prices. Hay, Hops, and Tobacco, have been in moderate demand at uniform rates.

CURRENT WHOLESALE PRICES.

	June 11.		July 13.	
	139 $\frac{1}{2}$	151 $\frac{1}{2}$	139 $\frac{1}{2}$	151 $\frac{1}{2}$
PRICE OF GOLD.				
Flour—Super to Extra State.	\$6 70	@ 9 75	\$6 40	@ 9 90
Super to Extra Southern.	10 40	@ 17 25	10 10	@ 17 50
Extra Western.	7 90	@ 17 25	7 65	@ 14 00
Extra Genesee.	9 80	@ 14 00	9 90	@ 14 10
Superfine Western.	6 75	@ 8 00	6 40	@ 7 90
RYE FLOUR.	6 00	@ 6 55	6 50	@ 7 50
CORN MEAL.	4 25	@ 4 75	4 75	@ 5 40
WHEAT—All kinds of White.	2 50	@ 3 00	2 65	@ 3 25
All kinds of Red and Amber.	1 45	@ 2 70	1 50	@ 3 00
CORN—Yellow.	83	@ 89	88	@ 97
White.	72	@ 81	83	@ 87
OATS—Western.	51	@ 56	51	@ 51
State.	—	@ 75	—	@ —
RYE.	98	@ 1 25	97	@ 1 23
BARLEY.	90	@ 1 20	93	@ 1 20
HAY—Bale @ 100 lb.	60	@ 90	60	@ 90
LOOSE.	65	@ 95	65	@ 1 00
STRAW.	100	@ 1 00	60	@ 1 10
COTTON—Middlings.	38	@ 41	35	@ 37
HOPS—Crop of 1865.	15	@ 65	15	@ 65
FEATHERS—Live Geese.	45	@ 85	40	@ 85
SEED—Clover.	8 $\frac{1}{2}$	@ 10 $\frac{1}{2}$	11	@ 12
Timothy.	Nominal.		6 70	@ 7 00
Flax.	2 40	@ 3 00	3 15	@ 3 80
STEAR—Brown.	43	@ 44	9 $\frac{1}{2}$	@ 13 $\frac{1}{2}$
MOLASSES—Cuba.	43	@ 65	49	@ 65
COFFEE—Rio, (Gold price).	15	@ 20	14	@ 19
TOBACCO—Kentucky, &c.	6	@ 30	6	@ 30
Seed Lard.	5	@ 43	5	@ 43
WOOL—D. mestic Fleeced.	38	@ 75	38	@ 75
Domestic, pulled.	28	@ 57	28	@ 57
California, unwashed.	15	@ 40	15	@ 40
TALLOW.	11 $\frac{1}{2}$	@ 12	12 $\frac{1}{2}$	@ 13 $\frac{1}{2}$
OIL CAKE—ton.	47 00	@ 49 00	52 50	@ 56 50
POKE—Mess.	29 25	@ 31 25	29 50	@ 31 00
Prime.	24 50	@ 25 00	26 75	@ 27 00
BEEF—Plain mess.	16 00	@ 20 51	16 00	@ 21 00
LARD, in barrels.	19	@ 22 $\frac{1}{2}$	18 $\frac{1}{2}$	@ 21
BUTTER—Western.	20	@ 32	20	@ 33
State.	25	@ 40	27	@ 40
CHEESE.	8	@ 19	6	@ 21
BEANS—@ bushel.	1 50	@ 2 75	1 50	@ 2 75
PEAS—Canada.	1 15	@ 1 20	1 15	@ 1 20
EGGS—Fresh.	1	@ 22	23	@ 23
PORK—Hams.	24	@ 25	21	@ 23
TURKEYS.	24	@ 25	21	@ 25
POTATOES—Merceds.	3 50	@ 4 25	4 00	@ —
Peach Blows.	4 00	@ 4 50	4 00	@ —
POTATOES—New.	3 00	@ 3 25	8 50	@ 11 50
APPLES—@ barrel.	2 00	@ 7 00	7 00	@ 10 00

New York Live Stock Markets.

BEEF CATTLE.—We are using about 500 more cattle per week this year than last, and the increased demand has been more than met during a month past, resulting in lower prices, though they have been higher. This week, good to first quality cattle have sold at 15 $\frac{1}{2}$ c@17c, per lb. dressed weight, a few of the very best or extras, at 17 $\frac{1}{2}$ c@17 $\frac{1}{2}$ c; Medium to inferior, 15c@14c; Poorest, 13 $\frac{1}{2}$ c@13c. **MILK COWS.**—Small receipts, and still smaller demand. Prices \$2 to \$5 per head below the detailed figures given last month. Cows are worth more in the country than here, in this weather at least. **VEAL CALVES.**—Receipts down to 1,200 per week; prices, which have been lower, are now 12c@12 $\frac{1}{2}$ c, per lb. live weight, for lots taken together; selected and extras, 13c@13 $\frac{1}{2}$ c; inferior, 11c@9c. **SHEEP AND LAMBS.**—Receipts 15,000 to 18,000 per week; this week, 14,795. Prices of sheep have run down gradually to 6 $\frac{1}{2}$ c@7c, per lb. live weight for the best lots, and 6c@5c, for common to poor lots. Fair lots bring 6c@6 $\frac{1}{2}$ c. Lambs are in demand at 11c@13c, per lb. live weight for poor to very good, and 13 $\frac{1}{2}$ c@14c, for extras. **LIVE HOGS.**—Receipts have been very large for the season, 12,500 to 15,000 per week, but the high rate of gold, and foreign demand for pork, on account of the European war, have kept prices up well; present rates, 10 $\frac{1}{2}$ c to 11 $\frac{1}{2}$ c, per lb. live weight, for poor to best corn-fed.

The Fairs.—We go to press so early in July, that it is impossible for a full list of fairs to be prepared; in fact, at this date, the announcement of the time of holding most of them has not been made. We hope to present an unusually full list for our September number, to which additions may be made if we have the information as early as the 10th day of August.

The Fair of the New England Society, in connection with the Vermont State Agricultural Society, will be at Brattleboro, Vt., September 4 to 7.

Meeting of the American Pomological Society, St. Louis, Mo., September 4.

The Ill. Implement Trial will be at Mattoon, Sept. 4. The N. Y. State Fair is to be at Saratoga Springs, September 11 to 14.

The New Hampshire State Fair at Nashua, Sep. 18 to 20. The Pennsylvania State Fair, at Eaton; the Wisconsin State Fair at—; the Ohio State Fair at Dayton; the Illinois State Fair at Chicago, take place on Sept. 25 to 28.

The Indiana State Fair, at Indianapolis, October 1 to 5. The Kansas State Fair, at Leecompton; the Minnesota State Fair, at Rochester, and the Kentucky State Fair, at Paris, all October 2 to 5.

The Oregon State Fair, at Salem, October 17 to 20.

New Horticultural Books.

ORANGE JUDD & Co., Publishers, announce the following new and important works, which will be issued as soon as practicable:

American Pomology.—Part I. The Apple. By Doct. J. A. Warder. The announcement that the first installment of Doct. Warder's long promised work on Pomology is already in the publishers' hands will be received with pleasure by all fruit growers. Our present fruit books are all behind the time, and a work that shall put up our present state of knowledge concerning them, especially with regard to the apple, is much needed. Our pomologists will agree that Doct. Warder is of all others the man to supply the want, and will be glad to learn that the results of his large experience and extended observations are to be made accessible to others.

Barry's Fruit Garden.—The work bearing this title, by P. Barry, of the Mount Hope Nurseries, Rochester, N. Y., has long been the standard, and indeed the only work of its kind. It will be entirely revised with such additions as the progress of horticulture may require.

Practical and Scientific Gardening.—By Wm. N. White, Editor of the Southern Cultivator, Athens, Ga. This is a completely re-written work, upon the plan of Gardening for the South, by the same author. While especially adapted to the States south of Virginia, its utility will not be confined to that section of the country. It will include all the various departments of gardening. Now in hand.

The Small Fruit Culturist.—By A. S. Fuller, Woodside Nursery, Ridgewood, N. J. The practical and scientific character of Mr. Fuller's Grape Culturist caused it to take at once the position of a standard work. The other small fruits will in this book be treated in the same manner, and we predict for it an equal popularity.

Market and Family Gardening.—By a New Jersey Market Gardener. This work was briefly announced last month. There is no book in the country upon managing a garden for profit, and we are glad to be able to meet a long existing want, by presenting one from one of our most clear and practical writers and experienced and successful cultivators.

It is with much satisfaction that we announce these contributions to horticultural literature. We have others in contemplation which we are not yet prepared to name. These works will all be fully illustrated and produced in a neat and serviceable style. We do not propose to issue works of reference for practical men, in fancy paper, binding, and price, which put them beyond the reach of all but the wealthy, but to give good substantial books, to be used rather than to be looked at, illustrated with engravings which shall aim to be correct, as well as artistic, and at a price that shall render them accessible to the general public.

Barometers Useful to Farmers.

At the "N. Y. Farmers' Club," the Barometer has been condemned, first, by one farmer who thought the barometer was something designed to make weather; 2d, by a reporter who pronounced the rules and observations of all really scientific men as "all utterly fallacious," and 3d, by another reporter who talked much about experience, and observation, but who by his own confession, had never tried a good mercurial barometer. So much for the opinion of the farmers of the Club. On the contrary, we have the united testimony of all the leading scientific men of this country, and the world over, that the barometer is exceedingly valuable to indicate approaching changes in the weather, which it does with a great degree of certainty. A sea-captain would be considered as utterly incompetent, who should go on a voyage without a barometer to indicate approaching storms, and these are governed by similar laws on land and sea, not always the same. The Smithsonian Institution is constantly having recorded, in all parts of the country, the fluctuations of the barometer, and the tens of thousands of observations thus gathered, show the intimate connection of the rise and fall of the mercury, and variations of the weather. We have watched the barometer for many years, and seldom if ever knew a change from wet to dry, or the reverse, that was not indicated by a rise or fall of the mercury. And most of these changes are governed by definite rules, upon which all scientific men have agreed. There are local or general exceptions to these rules, as when the atmospheric pressure is modified by the direction or velocity of the wind. But these are only exceptions, which careful observers must necessarily learn partly by experience, and must take into account. We assert positively and without fear of successful refutation by the "Farmers' Club," or others, that any careful, observant man, who will rightly watch a good barometer, will soon learn to predict the approach of wet or dry weather, from two to twenty hours in advance, in a very large majority of cases. A watch is useless to a

savage who can't tell the time. We repeat unhesitatingly, that a barometer is of very great value to every farmer or other person, on land or sea, to whom it is important to be forewarned of the immediate approach of a storm. To be most highly useful, it must of course be carefully observed. The novice may, and probably will, sometimes fail, and the careless man will often do so, owing to the occasional exceptions to general rules which he may not have learned to provide for in his calculations; yet with this drawback, it will be of great use to any one who is willing to devote the slightest care and attention to the instrument.—It will be useful to others, if such of our readers as have used barometers will send us an account of their successes and failures in relying upon them. We would like the opinion of a real "Farmers' Club," that is, of our agricultural readers who can speak from actual experience. We have no personal interest in any particular form or manufacture, but we have latterly commended and placed in our premium list those made by Charles Wilder and called "Woodruff's Mercurial Barometer," because its particular form renders it so portable and convenient, as well as for its general good make, and we shall do so again. The Aneroid is still more portable, and we continue the use of one at home with satisfactory results. But owing to complaints that its spring depreciated in elasticity in some cases, we ceased to commend it to general use. The permanent character and portability of the Woodruff instrument, impels us to place that above all others of similar cost for common use.



Containing a great variety of items, including many good hints and suggestions which we throw into smaller type and condensed form, for want of space elsewhere.

Sundry Humbugs.—Some 300 letters, received recently, refer to 28 different swindling concerns, of which half or more have been already described by us, directly or indirectly. Too many correspondents request answers by mail to admit of replying in that way. Suffice it to say that when no answer by letter is received, put down the thing inquired about as a humbug. Pray don't send us so much money to try these humbugs with. We have returned large amounts,—all that has come. If anybody must try any promising concern, just send the tickets to us and we will advance the money, if for a good thing, and then send for it when we get the prize, for such grand prizes as are offered will surely be security enough to us. This will save risk of sending money both ways in 999 cases in 1000. When one asks, is such and such an enterprise a humbug, our silence means "Yes," in our opinion at least. One swindler is trying to bother us by writing from different points, under assumed names, that he has recently forwarded us \$5 to invest in his concern, and asking us to return the money or the prize. "Old birds... Chaff"... That bogs "Merchants' and Manufacturers' Depository," is still troubling a good many people's quiet, by writing that they have drawn a "\$150," and upward, and asking merely the "\$5" for the ticket; a big swindle! ...Rev. E. Wilson, has a twin brother in Brooklyn, Dagnall by name. Among new humbugs, we find Sarah D. Lambert; Morehouse & Co.; Thos. H. Scott; and particularly Mackey & Co., who in two sets of tickets offer several of our subscribers articles valued at near \$400 00, all for less than \$30 in cash! We have plenty of their tickets of similar import. But space fails to describe a lot more of similar character, or to speak of the old ink, vinegar, and other receipts, selling as something new and valuable; of Lindsay & Co., Bain & Co., and Haber & Co., the San Francisco operators, etc., etc. See items under this head in our previous half dozen papers, which explain the various swindling schemes.—P. S.—July 13th. We can't find Mackey & Co., to-day.

The N. Y. Independent on Cabbage Seed.

The Independent, in its desire to supply an "agricultural column," has published far too much trash and error for a journal of its high standing and aims. Even on agriculture and horticulture it can not afford to be independent of accuracy and reliability. We have referred to one or two of its items, and several intelligent correspondents, who read both papers, have written us quite sharply about the Independent's defects, desiring us to correct them. We can not afford the space required to keep the agriculture of that paper straight. Its responsible editors, if not practical cultivators, are liable to be imposed upon by pretentious, unreliable penny-annuists.—As a moral and religious journal however, we suggest that the editors of the Independent should not, on their own account, allow these scribbles to stoop to

low slurs, and to dishonest garbling. Take an example from its issue of June 14. Omitting its slang, which far more concerns its own editors than us, we give parallel quotations from our language and from the Independent, as it pretends to quote us. To caution people against the Independent's advice to plant only cabbage stumps for seed, we said:

June Agriculturist:

"If there is any seed that needs care in raising, it is that of the cabbage, as this plant is removed from its natural condition and will revert to it, more or less, with the least neglect. Therefore don't follow this wise man of the Independent, [and plant stumps only.] but use only the best developed and be kept cabbages, with the head on the stump, for seed raising, and then allow only the central flower stalk to grow. Any other course will surely degenerate the variety."

Independent, June 14.

"As the seed of apples, pears, peaches, and squashes is found within the fruit, or vegetables, the editor [of the Agriculturist] reasoning from analogy, concludes that the seed of cabbages must be enclosed within the head of this vegetable!... It [the Agriculturist] says: 'Put out the cabbages with the heads on the stump, and select the seed from the sprouts that spring from the center of the head!' If this is not the most illustrious piece of stupidity that a gardener ever read of!... The editors of that journal [the Agriculturist] state that the sprouts from the center of the head are the only ones that produce seed suitable for propagating cabbages."

We italicise the word *head* in the quotation from the Independent, to show more definitely what it aims at. The reader has before him, in the left half column, just what we did say. Here is a deliberate and labored attempt to make the readers of the Independent believe that the editors of the Agriculturist were so "illustriously stupid," as to think that the seed springs from the head of the cabbage, and our language is misquoted to favor this end. Was that sheer ignorance on the part of the writer, or malicious falsehood?—We at first put in type the entire article of the Independent, its slang, bad grammar, and all, but concluded it would not only deface our own columns, but would be too severe upon the responsible editors of the Independent themselves, who are personally our friends, and whom we would not hold directly responsible for what has hitherto appeared in its agricultural department. We will simply hint that they will do well to make a little inquiry into the previous history and animus of their "agricultural writer," before they allow him the free use of their columns from week to week.—To our correspondents, who have written on the subject of this and other items in the Independent, we say, before being anxious about what they see quoted in that paper as from this journal, they will do well to first consult the original.—In respect to the question at issue, we reiterate our former caution: "Use only the best developed and best kept cabbages, with the heads on the stumps, for seed raising, and then allow only the central flower stalk to grow." The retention of the head to nourish the seed stalks has been found by experience to be necessary to the production of perfect seed that will propagate the original well. Our best seed growers use the largest and best heads entire on the stalk, for producing seed No. 1, and seed from anything but the best whole cabbages is marked No. 2, or inferior. We speak not only from our past knowledge, but from recent inquiry of large seed growers, as Mr. Brill, of Newark, and others.

The Great Implement Trial, at Auburn, is in progress as we go to press, and is to continue for an indefinite time. The valuable results arrived at will be duly placed before our readers.

Practical and Scientific Fruit Culture.

By Charles R. Baker, of the Dorchester Nurseries, Boston: Lee & Shepard. This is a work, the appearance of which has been looked for by pomologists with no little interest, as it was supposed, from the author's relations with the Hon. Marshal P. Wilder, it would embody many of that gentleman's ideas upon fruit culture. The preface relieves Mr. Wilder from any sponsorship, and the work stands on its own merits. It can only be considered as an industrious compilation of the views of writers on horticulture, and subjects having a relation thereto, such as meteorology, geology, etc. We never saw a book so full of quotation marks, and one looks over page after page filled with extracts of old and familiar writers—mainly Europeans by the way—in search of what the author has to say for himself. We do not object to a judicious use of quotations, but when thirty or forty pages are taken bodily out of the book of another and put in Mr. Baker's, some other name would be more appropriate than quotation. A book should either present old facts in a better form than had been done before, or add to our knowledge by giving us new ones. This work does neither, but only serves to add to the size of a horticultural library without increasing its value. Price by mail \$4.

Barn Yard Manure—A Request.—In order that agriculturists may be able to reason correctly in regard to the affairs of farmers in different parts of the country, several important elements should form a basis for such reasoning. The markets we all consider—that is, the ease with which crops, animals, or animal products may be sold or realized upon. We have every fluctuation in the markets reported daily, and every farmer finds it to his interest to be as well posted as he can be about prices of pork, beef, butter, corn and flour.—But there is another element which the farmers of the Eastern and Middle States at least know how to value, and which is almost always taken into their calculations when thinking about buying or bettering a farm, viz.: manure—the ability to make it, or to buy it. In all the older settled parts of the country barnyard manure has a market value. We are desirous of learning what the value of it is in all parts of the country, and will thank any of our readers who can conveniently do so, if they will give us the price at which they can buy good stall or yard manure of mixed dung and litter from common farm-stock. Manure is usually sold by the load, which means a load for a pair of oxen or horses, but for accuracy we will call it half a cord, 64 solid feet. The price within our own knowledge varies from \$6 to 50 cents. Those sections where farmers move barns to get them away from the accumulated manure are gradually growing less in number. That the comparison may be the more accurate, we ask also that the price per bushel of shelled corn or corn on the ear, by weight, on the farm, shall also be given. A collection and classification of answers to those questions will be interesting and valuable.

Ashes for Manure in Illinois.—"L. E. R." says, there is a steam mill near his farm where they burn coal and wood, and that he can have all the ashes he wants. His question is whether they will pay to haul and put about fruit trees, etc., on a yellow clay soil? We think it will pay, especially if the ashes are clean, free from clinkers and slag. Coal ashes would be of doubtful utility alone, but mixed as we infer they are with wood ashes, the value of the mixture depends chiefly upon the wood ashes. If there is much wood burned, it might pay even to sift the ashes (provided they can be easily run through a common coal screen), in order to remove the slag and clinker.

"Flour of Bone."—In April, page 129, we gave a general caution in reference to all fine ground fertilizers. The Agents of the "Flour of Bone," (advertised elsewhere in this paper,) inform us that certain interested dealers quote our remarks as specially applicable to their manufacture. That can hardly be possible, for the case of fraud referred to, was distinctly stated to have occurred two years ago—or before the Boston Company's "Flour of Bone" was heard of. We have had no reason to doubt that the "Flour of Bone" advertised by them, is pure bone, except the 5 per cent. salt added, which they claim to add, especially if furnished direct by the Company, or their authorized reliable agents. Our only controversy with them has been in regard to the price, and whether the "floured" material is as cheap as the lower priced coarser ground. That was the main point alluded to in April.

The Convenient Farm Gate described in the June No. (p. 219), is said by several correspondents to be claimed as a patented article and rights offered for sale. We know of its having been in use several years, and never before heard that the principle had been patented. Whose patent is it?

Trouble with Squashes.—Several complain that they are obliged to give up Winter Squashes on account of the borer. One writer finds a borer in the root. This is a new trouble, or one new to us. The ordinary borer we have had attack the stems, and have sometimes dug him out and saved the plant; but the mischief often gets beyond remedy. The parent insect which lays the eggs to produce the borer has an orange-colored body, with black fore wings and transparent hinder ones, and long fringes on its hind legs. It lays its eggs upon the vine, near the root, from June to August. If any such moth is seen about the vines, it is quite sure to mean mischief, and it should be caught. They are not very numerous, and it is probable that they may be headed off, if sufficient care be taken. Vines killed by this insect should be burned, or, at any rate, the grub should be killed, to prevent its increase.

The Practical Entomologist.—We have before alluded to this monthly, devoted to popular entomology. It was commenced as a gratuitous publication, and its projectors soon found they had their hands full. They now propose to issue it at the very moderate price of 50 cents a year, provided 5000 subscribers are

obtained. Otherwise the publication will not be continued after September. We trust those interested in insects will give it the very moderate support required.

Insects and Fertilization.—The lovers of the curious in nature will not fail to read the papers under the above title, contributed by Prof. Asa Gray. Most of the facts mentioned in these articles are for the first time given to the public, and while they are presented in a style so popular that every one can comprehend them, they are a very valuable contribution to science.

Unfermented Wine.—A Michigan clergyman, whose reputation induces us to respectfully consider his communication, takes exception to our statement that there can be no such thing as "unfermented wine," and informs us that it is an "important Western production," and quotes us the Hebrew name for it. While we admit that the reverend gentleman is right as to his Hebrew, we insist upon our English. The only two English dictionaries we have at hand are Worcester and Webster, both of whom give the definition of wine "the fermented juice of the grape." Until we get some better authority in English, we shall use the word *Wine* with the meaning above quoted, and *Must*, for the unfermented juice, which is no more wine than dough is bread.

The Agriculturist Strawberry is shown at a disadvantage on page 288, as the engraved specimen was taken as the average size of a large lot raised in the field and sent to market; while of some others, the largest specimens were the only ones at hand to be engraved from. The application however of a measure to the engraving of the Agriculturist, will show it to be very large for field fruit, grown on young plants.

The International Horticultural Exhibition and Botanical Congress.—The recent English journals are filled with accounts of the great show and gathering which took place in London in May last, and to which we alluded in our June issue. A friend who was present writes that the exhibition was a great success, and the display of plants probably never before equalled. The Botanical Congress he describes as having been a rather dreary affair, as it well might have been with botanists of several different nationalities, each reading papers in his own language. Of course there were guinea days for the nobility and shilling days for common people, and great dinners and tedious speeches, as is the custom with our friends over the water.

The "Golden Queen" Strawberry.—After our notes on varieties were made up, we had sent to us specimens of a strawberry called "Golden Queen," by Mr. J. B. Cline, of Rochester, N. Y. We have had an engraving made of one which will show its shape, and the average size of the specimens exhibited. The fruit is firm, bright scarlet, of a very aromatic flavor. It was stated in the summer meeting of the Fruit Grower's Society of Western N. Y., that this was the same as Trollope's Victoria. It certainly has some characteristics of that fruit, but we can not decide on their identity without comparing the two. Should this prove to be the Victoria, it will add another synonym to that variety.

The Butter won't Come.—Ella M. is in distress about her cream, and is half inclined to think it is bewitched. No amount of churning brings butter. It happens so sometimes in good dairies. Change the diet of the cows if you can, especially give them salt, but begin gradually if they have not been salted regularly, and keep it always where they can get it. Take good care of the cream, keep it cool, and begin churning at the temperature of 55° to 60° Far. (or 15° C.)

Cancer Quacks.—Of all classes of quacks, those who make a specialty of cancers are probably the worst. A case has fallen lately under our notice which we will record for the benefit of others. An estimable lady, in mature life, had been for some years under the care of a thorough, attentive and excellent physician, and suffering with a cancer, which was only the obvious development of cancerous disease, existing in that part of the system where it was situated. She might have lived for several years under the good treatment she was receiving, but was frankly told by her physician that the malady would in time prove fatal. By the ill-judged advice of friends she visited New York, submitted herself to a notorious cancer quack, submitted to a most excruciating operation, after which she rapidly sank away and within 3 months was in her grave. The quack's fee was \$300, in addition to some 3 weeks board in the city which must have cost \$100 more, money which, though willing paid, cost no small sacrifice to the family. These rascals are all alike; they are the cannibals of civilized society, actually devouring not only widow's houses, but

letting not even their patient's lives stand in the way of their gain of lucre. Avoid, as you would death, any man who advertises his cures. The successful cures of the "Cancer Doctors" are usually not cancers, but sore glandular tumors of some kind.

The "Frost Flower" of Russia.—Under this head the N. Y. Christian Advocate quotes from a "Boston journal" a story of a wonderful flower that bursts "from the frozen snow on the first day of the year, it grows to the height of three feet, and flowers on the third day, remains in flower for 24 hours, and then dissolves itself into its original element—stem, leaves, and flower being of the finest snow." And a great deal more of the same sort. Can our readers wonder that we "pitch into" newspaper science, when stuff similar to this is found in a paper in which we look for truth? The Advocate quotes from another journal, but it is no more true than if it had quoted from the Arabian Nights or Baron Munchausen. What thing may have served as a foundation of this story we cannot guess, but as the matter as presented in the article, it is just ridiculous. What there is in the constitution of daily and weekly newspapers to make them pervert or get at the wrong end of all matters of science, we cannot understand.

"The Great American Paint Company."—"Excelsior Paint."—An advertisement of this, marked for 3 months insertion, appears in several papers, and many inquire of us about it. From the name and claims, one might expect to find an immense establishment. We found a small third-story room, with one desk in it, as the office; but did not find the "head man" in. We sent one dollar, however, through other parties, and got the receipt, marked "copyright applied for." The recipe sold for \$1, proposing to make an "excelsior paint," seems to provide only for a lime white-wash, as the principal element is lime. Perhaps the sugar and salt added, may be of advantage. We shall try it. If on further examination and trial, it be found to be any improvement, and if the "Secretary" can show us any right he has for discovery, etc., we will help him sell it; otherwise, we will publish the recipe, and what it amounts to, in our next.

Silver's Patent Broom.—This is a novelty, certainly. By means of a cap and screw, the brush can be removed at any time. We have no broom corn at hand to test the removal of the old brush and the putting in of new, but we do not see why it can not be readily done by any one, and farmers thus raise a little plot of broom corn and make their own brooms, after buying a patent handle. The one we are using has a superior elasticity.

The "Lightning Apple Parer" is the name of a new machine—partly we suppose to indicate the great rapidity of its work, and partly because all the other striking names have already been appropriated by the thousand and one apple-parers before the public. However that may be, we like the "Lightning parer" for its simplicity and good work, two important requisites in every machine. It is described in an advertisement.

The "Lamb" Family Knitting Machine.—We examined the machine made by this company with some care at the last fair of the American Institute, and are satisfied that it is a most valuable invention, being comparatively simple, exceedingly rapid in operation, and adaptable to a great variety of work.

"Grand National Concert" at Washington.—Sundry circulars for the above come in just as we go to press, and have no opportunity to verify them. From the looks of the thing, we should have called it a gigantic "Gift enterprise" of exceedingly doubtful character, but these circulars are apparently franked by respectable members of Congress. Wonder if they saw the "pins," "ear rings," "sleeve buttons," "spoons," etc., offered? At best it is a disreputable affair, and is no better than a huge lottery, to say the least. The end not a whit sanctifies the means.

A Year of the Rinderpest in Great Britain.—June 22d completed the first year of the disease in England. Excluding the unreported cases, the official Report gives: 248,965 Cattle attacked; of which 121,187 died, 50,597 were killed, 32,989 recovered, and the results of 11,192 cases are not given. 51,343 cattle exposed, were slaughtered before being attacked. More than 1 in every 20 of the cattle in Great Britain were attacked; and of these, about 561½ in every 1000 perished. Of Sheep, 4,463 were officially reported attacked by the Rinderpest; of which 4,002 died or were killed and 461 recovered. 22 counties remained unvisited by the disease.—During the last week, the attacks numbered 666. The average weekly attacks during the year were 4,778.

Walks and Talks on the Farm.—No. 32.

We have been trying our hand at Cheese Making. It has long been a favorite theory of mine that we can make as good cheese in the wheat region as they do in the dairy districts. I think so still, but a few days' dabbling at cheese making, with no conveniences, may well deter any one from adopting it as a business.—First we wanted a cheese hoop. I was sent to the city to get one, but found it no easy task. "Have you any Cheese Hoops," I asked at the store where it was said they would most likely be found. "Yes, Sir," and thereupon they handed me—a peck measure with the bottom knocked out! This was the nearest approach to a cheese hoop that could be found in Rochester. I went to a cooper who it was said made them. But it seems he got up half a dozen five years ago and could not dispose of them, and gave up the business in disgust. He had none and would not make me one. So I took the peck measure, and started for home with pleasing anticipations of eating some nice home-made cheese next fall with a good old fashioned apple pie, made in a deep dish with no crust at the bottom!

Now for the cheese. Here is the milk, here is the rennet, and there is your hoop. But where is the cheese tub? The thrifty Scotch say, "keep a thing seven years and you will find a use for it." Some six years ago I got a Metropolitan Washing Machine, which has been in the lumber room ever since. It was voted to be just the thing for a cheese tub. So it was brought down, cleaned and sealed, the night's milk skimmed and poured in, and the morning's milk added. This made the temperature 74°. The rennet was added, and in about an hour the cheese "came"—sweet and tender as could be desired. We were jubilant.

Next the curd had to be cut, in order to allow the whey to separate. In the dairy districts they have a nice knife with six or eight long, narrow blades set half an inch or so apart, which, being drawn slowly through the curd, accomplishes the object in a few minutes. In the English dairies they use a tin hoop, about eighteen inches in diameter, with wires stretched across, and a wooden handle in the center. This is pressed down very gently and cuts the curd into small pieces. But we were obliged to use a long carving knife and a tin skimmer, with a free use of that original implement, the hand. We managed to get the curd partially separated, and dipped off carefully a portion of the whey; then cut the curd of one half the tub and placed it on the other half, and in this way got off more whey. Slowly the work progressed, but at last nearly all the whey drained off.

It was then placed in a cloth and put under a small lever press and pressed gently for an hour. It was then taken out, broken up fine and salted. Now for the hoop. The curd more than fills it! What is to be done? A tin fillet is put round the cheese and inside the hoop. This is the English way. As the cheese is compressed, the tin fillet slugs down inside the hoop and the curd is pressed. So far so good. But thinking that our hand press was not powerful enough, and recollecting that Dr. Voelker in his analyses of English and American cheese, found that one trouble with our cheese was that the "whey was not sufficiently extracted," we put the cheese under a cider press. This brought out the whey; but putting on a little more pressure, the so-called hoop, or peck measure, burst, and the fat was in the fire!

Another peck measure was got, and using less pressure the cheese was finally made. I have no doubt that the cheese will be good, but the shape is not quite orthodox. It is ten inches in diameter and eight inches high, and weighs 27½ lbs.

This is from one day's milk of 10½ cows. (We keep 11 cows, but one of them is a farrow.) And you must recollect that the night's milk was skimmed. Last week, before we commenced to make cheese, we got 79½ lbs. of butter—actual weight, not guessed at. This is a little over 11 lbs. a day. Now we get from a day's milk 27½ lbs. of cheese, and probably four or five lbs. of butter besides

from the night's milk—or say 192 lbs. of cheese and 30 lbs. of butter per week. At the present relative price of butter and cheese it certainly must be more profitable to make cheese than butter. But cheese making will not become general in the wheat region, until we have a good cheese vat, proper hoops, presses, and good arrangements for doing the work expeditiously. Those who judge of the labor of ordinary cheese making from a single trial with one or two cheeses, with no conveniences, will not be likely to go into the business.

Determined to give the matter a further trial, and feeling dissatisfied with the peck measure, I went again to the city and succeeded in finding a good cheese hoop. But it was sixteen inches in diameter, and if we made a cheese every day they would be too thin. So we "set the curd" one day and made it, together with the curd of the next day, into a cheese. We make the curd the first day precisely as if we were going to make a cheese, press it a little under a hand press and let it lie till the next day, when it is mixed carefully with the new curd, put in the large hoop and pressed. This gives us a cheese 16 inches in diameter and about 8½ inches high, weighing about 56 lbs. This is not a bad shape, and it is less labor than making a cheese every day, and besides, it gives you the use of the press for two days, which is undoubtedly better than pressing for only one day.

Our cows give fully one third more butter this year than last, due solely to good feeding and warm quarters in the winter. They were cows I bought with the farm. They looked well, but proved to be poor milkers. They had been suffered to go dry about the 1st of November, under the impression that milking them in the winter would seriously injure them the coming summer. And I have no doubt that there is considerable truth in this idea, provided the cows in the winter have nothing but corn stalks and straw, and are not stabled. But if they are fed liberally, they may be milked, not only without injury, but with positive advantage. It favors the habit of secreting milk. Till within six weeks or two months of calving, a good cow, with plenty of rich food, can give four or five quarts of milk per day, and will still be able to secure milk enough for the calf. She will eat and assimilate more food, and will get the habit of secreting more milk. I believe there is no better way of restoring the milking qualities of cows that have degenerated from poor management. I gave my cows three quarts each of corn meal a day, and an abundant supply of corn stalks and straw. Instead of letting them go dry in November, I kept them stabled in cold weather, and they gave more milk, or rather they made more butter, after we commenced to feed grain, in November and December, than they did in August and September. I milked some of them till within six weeks of calving. This is perhaps too much—ten weeks would be better. The cows, after we stopped milking, fleshed up rapidly, and many were the predictions that the corn meal would spoil them for milk. But it did not. They give more milk than ever before, and it is certainly very much richer. The prospects now are that for the year commencing the 1st of last November till the 1st of next November they will give as much again butter as they ever gave in a year before. So much for good feeding in winter. We weigh every pound of butter made, and I feel confident that this opinion will prove correct. I have not yet fed meal this summer, but shall do so the moment there is any indications of a falling off in butter. In fact I should feed meal now if I had my buildings conveniently arranged for the purpose. I have not the slightest doubt that it would pay to give each cow two quarts of corn and pea meal a day. If twenty bushels of corn a year will double, or even add one third to, the amount of butter and cheese made by a cow, it is easy to figure whether it is profitable or not. I do not say they will not eat as much grass and fodder as if they were not fed meal. The more food they will eat the better, provided it is turned into butter and cheese.

Mr. Judd of the *Agriculturist* came home with me yesterday from the S. S. Convention at Rochester.

He is a man of untiring energy, and like others of his temperament is rather inclined to apply the spur to those of us who are of an easier disposition and move slower. "Why don't you pull out the wild mustard from the barley," he asked, as we approached the field that I had underdrained and sowed so early. It is certainly the best crop of barley ever raised on this farm, but these few yellow heads of charlock annoyed him as much as a blotch of ink would on one of the beautiful engravings in the *Agriculturist*. "When he was a boy on the home farm, they went over large fields and pulled up every dock and cut off every thistle in the growing grain, and in a few years scarcely a weed was to be found on the farm." I do not doubt it. But it is one thing for the farmer or his sons or with cheap help to do such work, and entirely another to pay \$1.25 a day to do it. It is an argument in favor of small farms. The high price of labor meets us at every step, and mounds our agriculture. I have over thirty acres of barley, and it would take some time to go over it and pull out every weed. This work must be done the year previous when the land is in corn, and if the land is not thoroughly clean, plant it to corn again, and two crops of corn in succession thoroughly cultivated will go far to destroy all the weeds. Then if any escape, it would doubtless be well to go over the field when in grain the next season and pull out the few weeds that have escaped. But with much other work pressing—with planting, cultivating, hoeing, and a thousand and one little matters to attend to, I plead for gentle criticism if a few things are neglected.

One of my neighbors hearing that Mr. Judd was coming, wanted to see the editor of the *Agriculturist*, and asked me to drive him over. "Tell him," he said, "that I will show him the best seventy-five acre farm he ever saw." Is not that a happy disposition? Many people are just as well satisfied with themselves and their farms, but are not so outspoken. He and the Doctor have great times when they get together. We won't call it boasting, for what they say is strictly true. "I have got a hog that will dress seven hundred by next Christmas," says the Doctor—and he has. He gives it corn meal and sour milk, and stirs it with a red hot iron. He thinks this very important. He is raising a calf that he feeds in the same way, and it is really astonishing how fast it grows. In reality, however, it is not so astonishing after all, for plenty of good food, comfortable quarters, regular feeding, and daily petting, will make any well bred young animal grow. I like to see a man pet an animal. He can hardly fail to feed well, and in nine cases out of ten the heifer calves raised by such a man will prove to be good milkers. It is certainly a great mistake not to feed calves well. Push them forward for the first year as rapidly as possible. Let them come in at two years old. Feed high, and if well bred, you are almost sure of getting a "deep milker."

A farmer cannot make a greater mistake than to starve or even stint a young animal. But it is very common. If I were buying young pigs I would give double the price for a litter at two months old that had been well fed and gradually weaned than I would for a litter that had been neglected. As I told you last month, I bought two litters of young pigs. One litter was half Suffolk and quarter Chester White, the other was "Native." Both litters had received ordinary treatment—that is they were half starved! I paid nearly as much again for the half-bred Suffolks as for the others, for the sake of the experiment. I fed both litters alike, giving them sour milk and a little corn meal. So far, the "Natives" are decidedly ahead. My own half-bred Suffolks, that were fed with rich food from the day they were born, Pearl, the butcher, pronounced "the best pigs he ever saw," and he offered me 12 cents per lb. for them dressed weight. Not wishing to dress them I offered to take \$30 a piece for them, and he took me up! I have not yet learned how much they dressed, but I have no doubt the whole litter will average 250 lbs. dressed weight. They were not eight months old! I think it would not be easy to make a litter of common pigs do as well. The reason that the half-bred Suf-

folks I bought do not thrive as well as the Natives is undoubtedly owing to their not having good feed while young. The Natives will stand neglect and starvation better than a well bred pig. But feed them well from the start, and the latter will thrive the best. The reason why so many people get disgusted with thorough-bred stock is, that they do not feed high. The remark that "the breed goes in at the mouth" is partly true. No amount of breeding will enable an animal to make flesh out of air, or fat out of water. All that good breeding can really do is to lessen the amount of offal, and enable the animal to extract the largest amount of meat and fat from the food consumed.

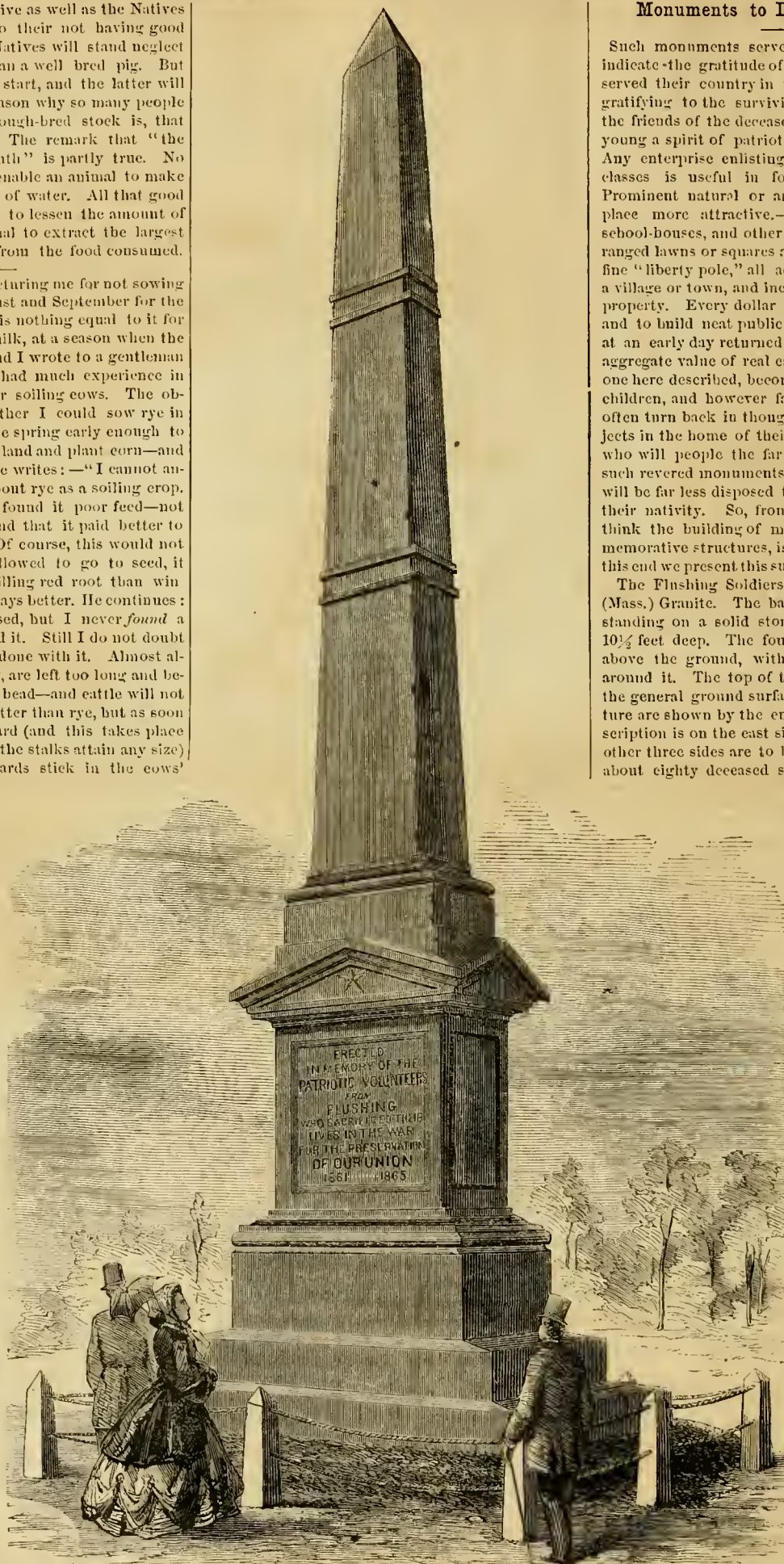
The Doctor has been lecturing me for not sowing some corn to cut in August and September for the cows. He thinks there is nothing equal to it for keeping up the flow of milk, at a season when the pastures are apt to fail, and I wrote to a gentleman in Connecticut who has had much experience in raising different crops for soiling cows. The object was to ascertain whether I could sow rye in the fall, and cut it in the spring early enough to enable me to plow up the land and plant corn—and thus kill the red root. He writes:—"I cannot answer all your enquiries about rye as a soiling crop. In my own experience I found it poor feed—not enough on the ground—and that it paid better to let it grow for grain." Of course, this would not answer the object. If allowed to go to seed, it would be no better for killing red root than winter wheat, which with us pays better. He continues:—"I hear of its being used, but I never found a man who used it and liked it. Still I do not doubt that something might be done with it. Almost always, both rye and barley, are left too long and become hard—all straw and head—and cattle will not eat it. Barley is much better than rye, but as soon as it heads and has a beard (and this takes place almost immediately after the stalks attain any size) it is bad—the barbed beards stick in the cows' throats. Clover comes so early, or orchard grass, or the mixture, that it does much better every way. The cows eat it better than anything else; it yields heavily; continues in season well (by having some more manured than other pieces) and it makes milk." (I have no doubt that clover is one of the best soiling crops that can be grown. By top dressing it in the fall it will produce a heavy crop and much earlier than if not manured.) "If I should sow rye," he continues, "I would sow it very thick, say five bushels per acre." (I suppose with heavy manuring and thick seeding we should get a larger and earlier growth, and finer in quality. He sows as much as six bushels per acre of oats and barley for soiling. Barley he thinks one of the best late crops for soiling, as frost hurts it but little.) "After clover," he says, "I use oats and peas, sown in drills—1½ bushels of peas and 1 bushel oats. If they come up poorly, you may need more peas. On rich land they do very well indeed, and are relished almost as well as clover."

Monuments to Deceased Soldiers.

Such monuments serve a double purpose. They indicate the gratitude of the people to those who served their country in its hour of trial, and are gratifying to the surviving soldiers as well as to the friends of the deceased. They cultivate in the young a spirit of patriotism and love of country. Any enterprise enlisting the united efforts of all classes is useful in fostering a public spirit. Prominent natural or artificial objects make any place more attractive.—Beautiful churches and school-houses, and other public buildings, well arranged lawns or squares and cemeteries, and even a fine "liberty pole," all add to the attractiveness of a village or town, and increase the saleable value of property. Every dollar raised to improve streets, and to build neat public structures of any kind, is at an early day returned ten-fold in the increased aggregate value of real estate. Structures like the one here described, become fixed in the memory of children, and however far they wander, they will often turn back in thought and heart to these objects in the home of their childhood. If our sons, who will people the far West, leave behind them such revered monuments, or other like things, they will be far less disposed to secede from the land of their nativity. So, from every consideration, we think the building of monuments, or other commemorative structures, is to be encouraged, and to this end we present this subject and illustration here.

The Flushing Soldiers' Monument is of Quincy (Mass.) Granite. The base stone is 9 feet square, standing on a solid stone and cement foundation 10½ feet deep. The foundation is raised 3½ feet above the ground, with a grass covered mound around it. The top of the shaft is 37 feet above the general ground surface. The form and structure are shown by the engraving. The general inscription is on the east side of the base, and on the other three sides are to be engraved the names of about eighty deceased soldiers. It is suggested to cut the portrait of President Lincoln, as the Nation's martyr of the war, on the side opposite to the star. The cost complete, including fencing, etc., is about \$4,500.

The enterprise was originated last year, and a general committee appointed. A Special subscription of over \$2000, in sums of \$5 to \$500, was subsequently raised, which has since been increased by lectures, concerts, etc., including over \$600 from a Strawberry Festival. The balance is being collected in Dollar Subscriptions, each subscriber receiving a beautiful tinted engraving of the monument, having on it a certificate of membership. The Committee are: Messrs. J. B. Brewster, Orange Judd, Fred. A. Potts, Lendal F. Pratt, L. Bradford Prince, Chas. A. Roe, Maj. Jacob Roe-mer, Hon. Morris Franklin, Chairman, Joseph T. Moore, Treasurer, and Benj. W. Downing, Secretary, who will furnish any desired particulars. Any one sending \$1 to the Treasurer at Flushing will receive a certificate of membership, including also a tinted engraving suitable for framing.



SOLDIERS' MONUMENT—FLUSHING, QUEENS CO., (L. I.) N. Y.



R A B B I T S.—FROM A STUDY BY ROUSSEAU.—(COPYRIGHT SECURED BY M. KNOEDLER.)

Rabbit Breeding.

It was one of the joys of boyhood to keep rabbits, and though we never made much use of them as food at that time upon the home table, our friends were glad to accept the present of a fat pair now and then; and some little profit, which, to boys amounted to a good deal

were studied with an interest which impressed facts upon our minds that have been useful ever since—not that we boys pursued deep investigations in the theory and practice of breeding, but we certainly got some very good lessons. Others, however, have used rabbits for scientific investigations into principles which they have applied to their flocks and herds with great advantage; among them we may mention the late Col. Jacques, of Worcester County, Mass., and the lamented Col. F. W. Rotch, of Otsego County, in our own State.

Rabbits do not require expensive houses or yards, but may be bred in health and to excellent advantage, in the simplest kinds of boxes and hutches. It is best usually to have a pen, with a roof over the whole. A part of an open shed

figured because we had so good success with it.

First a pit fully 3 feet deep was dug, and a box (A, fig. 2) set in it, open at the top and at one end. The box was about 3 feet long, 18 inches wide, and of the same height. A board passage (B) having a bottom and sides only, was then made from the open end of the box up to the top of the ground. The whole was then loosely filled with soft sandy soil, with a few stones as heavy as the rabbits could move.

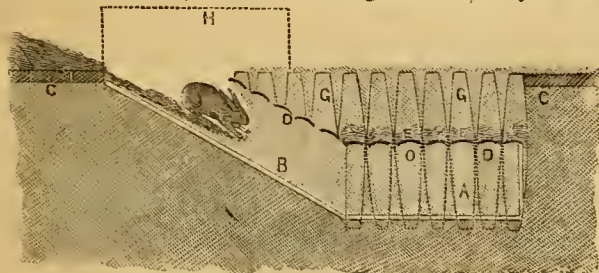


Fig. 2.

however, came from the sale to companions of the surplus of our flock. It was not for profit, nor to give them away, that rabbits were kept, but they were enjoyed as pets and companions. Almost every one had a name, and the mysteries of pairing, nest making, suckling, etc.,

is a favorable place, and this should be laid with boards or paved with bricks or stones, to prevent their burrowing out and doing mischief in the garden. Ambitious to imitate nature so far as possible in accommodating our pets, we made a contrivance which is described and

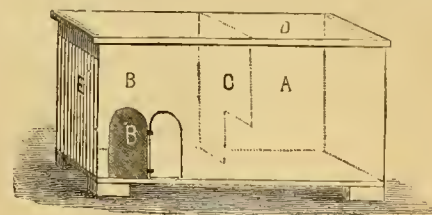


Fig. 3.

Then we nailed barrel staves (D, D,) over the box and the passage, and scattering some shavings on the staves, filled up the pit with earth—not, however, before we had driven barrel staves (G, G,) in a row all around the box and passage-way, coming up to the surface and

meeting the pavement. Our reasoning was, that when the doe had dug out her nest in the box, (which we were sure she would do if we started the hole a little for her,) then it should have the natural ventilation of the open earth, and not have a close box cover, and close pavement over it; and yet the loose earth above the box should be so enclosed that other rabbits could not dig down and work galleries beyond the limits of the pen. The does would dig out their burrows in these boxes just as contentedly as if they were at work in the open ground, and when one began to make her nest before bringing forth her young, we would turn a box, with no bottom and a slatted top, over the mouth of the hole. In this box the feed was placed, and hay and straw for the nest. Thus the doe was left entirely to herself and her family, and could not well be interfered with by curious persons, or even by the owner himself. When the young ones are old enough to be taken from the mother (say 4 or 5 weeks old,) they should be removed—certainly in time for the next family, which may come in 5 or 6 weeks.

Such a sunken box or burrow is not necessary for the successful breeding of rabbits; but with a few boxes like fig. 2, and good care, success is quite certain. This box is of about the same size as the buried one in fig. 1, viz: $1\frac{1}{2} \times 1\frac{1}{2} \times 3$ feet. One end is of stiff fixed wire rods, one rod being inserted close to the wood on each side, to prevent gnawing. There is a partition across the middle of the box, with a corner cut out for a door, and there should be an outside door as shown. The top lifts off, or is hinged and locked down. This box may easily be cleaned out, and is big enough for a pair of young rabbits, or one breeding doe.

Young rabbit breeders should remember not to let bucks and does run together, after they are 5 or 6 months old; not to feed too much green food, nor any wet food, but to give plenty of hay, with some oats, barley, or other small grain, in connection with green food, clover, grass, young lettuce, cabbages, roots, etc. Celery leaves are good occasionally, and so are any other sweet herbs they will eat. They need no water, and are usually better without it, if they have some green food daily. We have kept rabbits all winter on nothing but hay, with no water, and they did finely. A doe, 6 or 8 months old, should be left one day with a buck, and she will probably have young ones 31 days after. Old bucks are very apt to kill the young if they can, and two bucks will generally fight and often kill one another.

How to set a Bar Post.

"Any fool can do that," said neighbor Tucker, as I got the hole dug out to plant mine for the fifth time. "Just chuck your post into that 'ere hole, and pound the dirt in well, and it will stay till it rots. Dirt packs a great deal solidier than stone," said Tucker by way of a clincher.

"Not so fast, neighbor Tucker," said I. "There is gumption needed in setting a bar post as much as in setting a hen. I used to do it in your way until I found out a better. You see if you pack the dirt in solid there is no chance for the water to run off quick, and the soundest wood will rot off just below the surface of the ground in a very short time. I have had 'em spoiled in three years so that I had to put in the other end. That bar post has been in service at least 35 years, and if you examine the wood, you will see it is about as sound where it has been under ground as it is above.

"I dig a good sized hole to begin with, and then put in a good sound post of chestnut or white oak stripped of the bark. The butt should be at least eighteen inches below the lower hole in order to hold well. I pack in around the post stones of any convenient size, and pound them in sung with a crowbar. This leaves room for the air to circulate all round the bottom part of the post, and it is kept about as dry as if it were above ground. A post set in this way is good for an ordinary life time. I have some posts of forty years standing, and they are good yet. The frost of course will move the stones, and they will need resetting occasionally, but no oftener than those packed in dirt."

"How much, do you suppose, you have saved by that operation," asked Tucker with a sneer.

"No contemptible sum," said I, "as you can easily calculate. Bar posts set in dirt will last say five years; in stone forty. If they are worth 2 dollars a pair I save seven pairs in forty years, or fourteen dollars, not counting the interest for every bar way. I have forty on my farm, quite too many I admit, but that makes a saving of \$560, which is worth looking at."

It is by attention to small things that the farmer makes his money and his fortune. A penny saved is as good as a penny earned.

CONNECTICUT.

More About Wild Oats.

In February last, we published an account from a correspondent in Wisconsin, of the occurrence of the Wild Oat (*Avena fatua*), in his vicinity. The writer gave an account of its supposed occurrence by a degeneration of the cultivated oat. This statement has brought out several letters in reference to the oat. Mr. G. C. Hill, of Fond du Lac Co., Wis., says that he has known the oat for ten years, doubts its being a degenerate cultivated grain, but thinks the seeds were probably introduced from California, with seed wheat. He says: "Wild oats are a great pest in a wheat growing country. They are hard to eradicate by tilling, because only those seeds that are near the surface will vegetate, while those plowed under deep will produce a crop in after years. My plan is to seed down and mow or pasture."... F. V. Morrison, of Ulster Co., N. Y., states that a few years ago, in Brown Co., Wis., the wild oat "would over-run and nearly destroy cultivated oats and spring wheat." On the other hand, James Cass, of Sacramento Co., Cal., wonders that we consider the appearance of the wild oat in Wisconsin, as something to be regretted. He says: "If I were in Wisconsin, and knew as much about the wild oat as I do now, I should be delighted with its appearance."... "In curing it for hay, it must be cut as soon as the top seeds are turning, and put into cock as soon as you can give a handful a wring and not produce sap, and it should not have more than one dew, by any means, as the least dampness sets the seeds to crawling out. As a hay, it is unsurpassed in this State, and brings the highest price in our markets. I cut from 40 to 75 tons yearly..." These statements show how differently the same plant is regarded in widely dissimilar climates. In reconciling them, it should be recollected that there are but few portions of California in which our most valued meadow grasses will succeed. The wild oat is the best grass that grows there. With regard to the alleged identity of the wild and the cultivated oat, the principal proof lies in the experiments of Prof. Buckman, formerly of the Royal Agricultural Col-

lege, England. He, by planting and selecting those specimens that showed a tendency to lose their wild character, and continuing this for several years, succeeded in producing a plump grain, destitute of hairs, and having the general characters of the variety of oats known as White Tartarian. A portion of the original bed was continued by allowing the plants to seed the ground in the natural way, while the selected seed was kept out of the ground until spring. Prof. B. has made many interesting experiments in "ennobling," or improving plants from their wild state, and attributes great importance to the keeping the seed out of the ground from the time it matures until the time for sowing. This is one of the conditions in which most cultivated plants differ from wild ones, of which the seed falls at maturity, and generally lies all winter in the earth.

How the English destroy the Hop Aphid.

The hop crop of this country has been greatly damaged in many sections—almost destroyed, for three years part by the hop-louse or Aphis.

These little insects multiply so as to be particularly observable during the month of July, and soon cover the entire vine with mildew-like green masses of life, sucking its juices, and destroying the crop. Some patents have been issued for preventing this destruction, but we are not familiar with the means employed. There are a number of substances, which, if they can be applied, will kill Aphides and not harm the plants upon which they live. Tobacco smoke, and tobacco water are both used in green-houses upon tender plants with success.

Mr. F. W. Collins of Rochester, the inventor of the horizontal hop yard plan, which has been described in this Journal, and in our hop book, spent last summer abroad looking into the modes of hop culture. He writes us, that the English hop growers use almost universally one or the other of the following washes:

1. A mixture of strong soap suds, to which salt and saltpeter are added, so that a brine is made about half as strong as common beef-prickle, and to this one pound of copperas to five gallons of liquor is added, dissolved in warm water.

2. Tobacco water made about as strong as for sheep dipping: that is, a strong decoction made by boiling a pound of tobacco in a gallon of water. The stems and refuse parts of the leaf are usually employed.

Mr. Collins says: "They raise hops in England on a much larger scale than we do in this country. Gardens of 50 to 100 acres are quite common, and 200 to 300 in one plantation are occasionally seen. They are strictly watched, and as soon as the vermin begin to appear on the vines (or *bines* as they are called there), they go through between the rows with a machine, like a little fire engine, carrying a tank containing the liquid and a force pump. There is a hose with a sprinkling nozzle attached, by which the liquid is thrown in fine but strong jets to the tops of the highest poles, in such a way as to strike the leaves upon the under sides where the lice for the most part collect. We can easily apply the preparation to our smaller yards with the green-house syringe or the garden engine, especially, if the economical system of training on short stakes and twine be employed. This brings all the vines within 7 feet of the ground, and so within reach. This is an advantage of the horizontal system perhaps not heretofore appreciated, and it will be still more

valued should the mold or mildew appear here. In England this disease causes a thickening of the parts affected, the stems and leaves, and attacking the burs or immature hops, stops their development. To prevent this, they dust on sulphur with a machine for the purpose.

The hop crop is the most paying crop, both in Europe and America, taking any ten years together for 40 years past. In this country its culture is rapidly increasing. We have now about 16,000 acres devoted to hops; England has 50,000, Austria 150,000. Our hops are nearly 30 per cent. stronger than those grown in England, and fully equal to the Belgian hops.

Peat and its Uses. *

The great war from which this Nation recently emerged with all its woes and terrible suffering, financial crises, and political overturning, not only worked great changes in the domain of State craft, but it also inaugurated equally startling movements in the economies and industries of the country. Among all the various subjects that have claimed the attention of the public, and appealed to capital for development, which we may regard as directly or indirectly the fruit of the war, the development of our *peat resources* is prominent. The rage for speculation in stocks and gold having most wickedly extended to the necessities of life, bread-stuffs, meats, coal, etc., the stores of fuel in our immense deposits of muck and peat, naturally attract the attention of enterprising men. They find a material, differing greatly in quality and in accessibility, but existing almost everywhere in the country; but they find also many not unexpected difficulties in the way of its rapid or general introduction as fuel. Though many kinds burn well, simply cut and dried, yet the smoke is disagreeable and a strong prejudice exists against it among those who have been accustomed to more convenient fuels—wood, coal, coke, etc. In other countries much thought and labor have been expended upon peat to bring it into compact and convenient forms, but the American way is, not to follow, but rather to strike out new paths; so the ingenuity of men has been taxed to dry and press peat into the driest and densest masses possible, and of convenient size, so that it may be used like coal. The results, satisfactory as they are in many particulars, are not yet proved to be thoroughly economical. The condensed peat is excellent fuel, but the pressing machinery is expensive, the manipulation and drying is costly, and the new fuel must yet find a market.—The work of Professor Johnson, the title of which we use as a heading to this article, is very full upon the most successful methods of preparation of peat fuel in use both in Europe and in this country, describing them, illustrating the machines, and giving the economical results, in a way to enable us to compare the expenses of doing the work here with those abroad.

It is not alone in the furnace that the uses of peat, etc., are discussed in this valuable work; for to the farmer the subject has an especial interest and value. This we have often considered in these columns, but it is a matter always important, and upon which every new fact should be sought and applied. A consider-

able portion of the book is devoted to the consideration of its employment in agriculture, embodying the results of a very thorough investigation of the peats and mucks of Connecticut, made by the author some years since, in which many of the best farmers of that State co-operated with him in the investigation so far at least as to furnish many samples for analysis, and to describe minutely their ways of making composts, and the effects of the manures thus made, upon various crops. Whether therefore we regard the book from a purely scientific stand point, or with relation to its bearing upon mechanical and domestic economies, or upon the most important of all industries, agriculture, it is one of the most valuable works recently issued from the American press.

Chicken Medicine.—Charcoal.

Under this general title we continue a subject discussed on page 252 (July,) and include here a statement of a Springfield, Ill. correspondent, about the wonderful effects of charcoal upon a diseased and dying lot of turkeys, prefacing his letter, however, with a word or two about charcoal as a preventive of, and a remedy for disease in almost all our domestic animals, and not less in man. The most convenient form in which to administer it, is as the "prepared charcoal" of the drug shops. This is simply soft wood charcoal, which, being thoroughly and carefully burnt, is finely pulverized. It is the best cure we know for bad breath, indigestion, ulcers, etc. It may be given internally mixed with food, or clear, as the bird or animal prefers, and we know of no need of caution against excessive doses. It is conveniently made by covering soft wood embers with ashes, and when the heap has done smoking, and is a mass of live coals, open it and sprinkle water upon the mass. The coals, and if some of the ashes are attached it is just as well, may then be powdered to fine dust. "J. S. D's" experience is as follows:—

"I have thought that some of my 'dearly bought' experience, if communicated through your columns, would be instructive to many of your readers. In 1847 I took up my residence in a small county town in that portion of Southern Illinois, named 'Egypt' (probably by unsuccessful speculators—perhaps from its great fertility and mild climate, but more likely from the supposed ignorance and mental darkness of its population.) We were seventy-five miles from St. Louis, the roads to which city, although excellent in summer, were during the open, constantly freezing-and-thawing winters almost annually impassable to wagons. I kept a country store, and one day in January, a customer drove up to my door, with about one hundred turkeys. A sudden thaw, accompanied by rain, had set in, and any further traveling was impossible. He wanted me to take the whole load for 31 cents each, and I finally reluctantly yielded. The turkeys were turned into a good-sized lot, in which was a house for shelter, and abundance of gravel, sand, water, and corn, costing only 15 cents a bushel, to feed them.

One would suppose this to be a very paradise for turkeys, but it was soon found to be their grave-yard. Notwithstanding our care and abundant food, they drooped, sickened, and commenced dying. We changed their food, gave them oats, corn meal, fresh meat, procured fresh gravel, but all to no purpose, the sickness and mortality increased and continued. It was clear that they had contracted some disease

while cooped on the wagon, and that four or five weeks freedom, and abundant and pure food appeared to only aggravate it. What was to be done? Everything had been tried within our knowledge. Old ladies, familiar with 'Turkey,' were solemnly consulted, but their nostrums and opinions were as useless and valueless as our own experiments, when, accidentally, the remedy presented itself. There was a smoke-house in the yard in which the turkeys were confined; the fire, made in a pit extending the length of the house, was extinguished with water every night. A considerable quantity of charcoal was there made, which was cleaned out every morning. The first thrown out into the yard brought the turkeys; they eat every piece of it and continued to eat it daily for three weeks—the time consumed in smoking. Then an English poultry butcher, who was on the 'tramp,' butchered and dressed them, placing the livers under one wing, and the gizzards under the other, ran two handsome skewers through each of them, and decorated them with ornamental white and colored paper. They were pronounced the finest lot of turkeys ever seen in St. Louis' market."

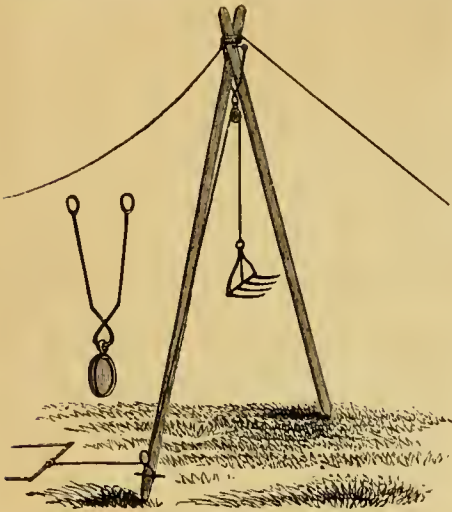
Gas Tar for Posts.

A correspondent says: "The complaint is sometimes made that gas tar does not prevent rot in posts. Whenever it fails to do this, it is probably because the posts were green when it was applied. Of course, when they afterward became season-cracked, the moisture entered the cracks and decay went on rapidly. The only way is to use seasoned posts. The tar is generally applied with a coarse brush. Experience is now showing that the best of all ways is to heat the tar in a deep vessel, and when it is boiling, set in the lower ends of a few posts at a time, keeping them in about half an hour, so that the tar will fairly boil into the pores of the post. This requires time and patience, but it is worth the while, because posts so treated will last half a century. The gas tar coating should extend up a few inches higher than the surface of the ground." It is settled also that if the freshly tarred posts be covered with sand or sandy soil, the highest good effect is secured. The experiments detailed in the *March Agriculturist*, page 94, showed the best result from applying hot gas tar with sand twice, at intervals of three days.

Horse Carts, or Wagons?

Where the roads are smooth and level, and where but little field work is to be done, the horse cart is endurable, if made light and handy. But as a general rule, they are the most cruel machines ever made for horse-flesh. For farm-work, they must needs be made strong and heavy. The requisite harness weighs from forty to fifty pounds. When the cart moves on level ground, it bears heavily on the horse's back; when on a descent, it is still worse; if toiling up hill, it pulls upward on the belly; if one wheel falls into a rut, it whirls the thiills suddenly to one side, and tends to upset the horse, and at best strains him. The unwieldiness of a cart is seen in the fact that it is almost impossible to make a horse trot in one. Not so, however, with a four-wheeled wagon. We advise our readers not to invest in horse-carts, without thinking the matter over carefully. There are many handy dumping wagons made now-a-days,

* PEAT AND ITS USES; its origin, varieties, and chemical characteristics; its applications in agriculture, and its preparation, value and use as fuel: by S. W. Johnson, M. A., Professor of Agricultural Chemistry at the Sheffield Scientific School, Yale College.—Fully illustrated.—Orange Judd & Co., New York. 163 p. 12mo. Price \$1.50.



Stacking Hay or Grain.

The use of the horse fork in unloading hay and grain is all but universal nowadays, but there has always been a difficulty in using it for stacking, so much apparatus was required. The use of a simple pair of shears has been recommended, and we have suggested it to our readers. A correspondent sends us a sketch, from which we make the accompanying engraving, to illustrate his way of accomplishing the end cheaply and easily. He selects two strong poles, so long that when bolted together at the tops, the pulley suspended between them will be about 24 feet from the earth. This pulley block is hooked on to an eye bent in an iron rod, which is shaped as in the enlarged part of the figure, and sprung over the bolt. Another block is attached to the foot of one of the legs of the shears, a pin being run through it. The engraving shows how the rope is rove through these blocks, and how the horse is attached. If the ground is hard, the end of the pole against which the horse draws is secured from slipping, by driving stakes into the ground. The shears are held in place and given any desirable amount of play back and forth, at the top, by two guy ropes. The load is driven quite close to the shears at one side, and when a forkful is raised and swung over the stack, the shears incline that way, being allowed to do so by the slackness of the guy-rope that passes over the load. This plan seems feasible, and has the merit of simplicity.

About Farm and Orchard Ladders.

Our correspondent, Gilbert J. Greene, of Hudson, who has given us so many practical hints, offers some upon ladders, which, in the main, strike us as excellent. There are numerous patent ladders made very light and strong, of white pine or white-wood, some of which we have used with great satisfaction; but these are not within the convenient reach of all, and besides, it is always better to use one's spare hours in making such things, rather than one's spare change in buying them. Mr. G. says:—

"The ladders in use about the farm are often heavy, clumsy affairs, often requiring the strength of two men to carry or put them in position. Soft wood will make a stiffer ladder than hard-wood, one more easily made and handled, and less liable to be broken if thrown down. A ladder with the sides of $1\frac{1}{4}$ inch pine, $2\frac{3}{4}$ inches at the bottom, and 2 inches at the top, and 18 feet long, with oak rounds about 21 inches long at the bottom and 15 at the top, will weigh only

about 28 pounds. It can be readily handled by a boy, and will sustain a weight of 200 lbs., placed at any angle. Second-growth basswood is the best timber to make ladders of, because it is the stiffest light timber grown in this country. A ladder, 26 feet long, 3 inches at the bottom and 2 at the top, and 1 inch thick, will weigh about 32 pounds, and will sustain a weight of 150 pounds placed in the centre, the ladder lying in a horizontal position, and sustained only at the ends; (of course, it will sustain a heavier weight if set in any other position.) The rounds of a ladder (to use a contradiction of terms) should be flat, $1\frac{3}{4}$ inches wide, and $\frac{5}{8}$ inch thick, and the mortise $\frac{3}{8}$ inch wide. About every fourth round should have a dovetail, made upon the upper side of the tenon, the mortise cut to fit it, and a wedge driven in beside the tenon to fasten it. In this way the ladder is securely fastened together, and the outside is smooth.

A ladder should not be left exposed to the weather, but should be well painted, and placed under shelter when not in use. Fig. 1 represents a light ladder, from 10 to 12 feet in length, to be



Fig. 1.

Fig. 2.

used about the fruit garden or orchard, where a longer ladder is not necessary, or might injure the trees. A brace, B, is hinged to the upper part, and can be so placed as to give the ladder any desired angle; a single brace is much better than a double one, because it is more easily constructed and handled, and the ladder will stand square on any uneven surface. Such a ladder, 12 feet long, of pine or basswood, weighs about 23 pounds. [We very much prefer two independent braces, instead of one. They must each swing free, and be firmly hinged upon the upper round or near the top of the ladder, as shown in fig. 1. Two independent braces will hold a lad-

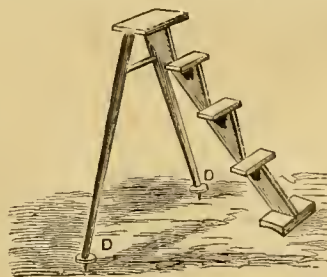


Fig. 3.

der very firmly, but if they are united by a stiff cross-brace, they are much less secure. ED.]

Fig. 2 is an extension ladder, which possesses some merit. It is composed of two ladders, so

arranged that one can be drawn above the other to any desired height. The ladders can be of any length; they should be of the same



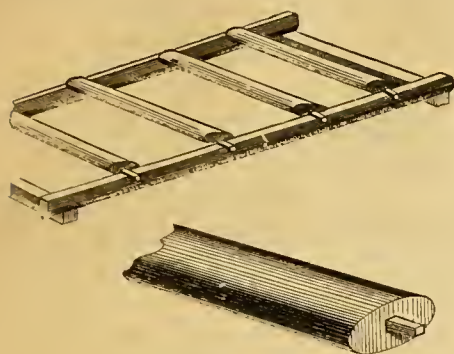
Fig. 4.

width at each end. They are held together by a strap of flat iron, as A, fastened upon the top of the first ladder and on the bottom of the second; they should be loose enough to admit of their sliding freely upon each other. The second round in the lower ladder is turned with shoulders, this passes through the sides of the ladder, with a small crank upon one end. A rope, twice the length of the ladder, is attached to this round, which passes up on the back side of the ladder. A small iron pulley is attached to the top round, and thence the rope passes down the front to the bottom round of the second or upper ladder; turning the crank to wind up this rope draws the second ladder above the first to any height. The ends, however, should always be allowed to lap upon each other, at least twelve to twenty inches. The top ladder is kept at any desired height, by fastening a hook, as B, fig. 2, to the bottom round of the second ladder, and hooked on any round it will reach in the first ladder. The iron straps, holding them together, should be fastened with screws, so that the ladders can be taken apart and used separately if desired. With this design in view, it would be a good idea, perhaps, to have the ladders of different lengths." The construction of figures 3 and 4 is readily seen.

Hints About Hen Roosts.

In the treatment of our domestic animals, there is no guide so reliable as nature. If we keep our eyes open and observe the habits and inclinations of our dumb dependents, we will gain insights into their natures so that we may be able to do much for their health and comfort. The following hints about hen roosts illustrate and suggest this idea. "X," of Green Bay, Wisconsin, sends the following communication to the *American Agriculturist*:—"In some of the more northern latitudes, where the mercury falls to zero, and below, it is difficult to preserve poultry from freezing their feet, and I shall be glad if my experience in preventing it will be of any value to others. If you will observe the habits of poultry during the year, it will be noticed that in warm weather they prefer to roost on poles, the edges of fences, boards, etc.; while in cold weather they seek out flat places, where their toes may be kept up among the feathers. The favorite place which my fowls found in the winter, was the top of an unfinished harness room, where they found the flat surface of a 2×4 scantling, with its broadest side up. In the summer, they go back to the roosting poles, which are probably cooler.

I have devised a plan to accommodate them winter and summer, which I have tried to make plain by the accompanying rude sketches. Scantlings, 2×4, are made into oval shape, as



HEN ROOSTS.

shown enlarged, with a pin in each end, so that they will turn on the supports. A number of them are then fitted in inclined supports, as is shown, and can be adjusted with their broadest or narrowest surfaces uppermost. In this way the careful and humane poultry keeper may give his fowls, without trouble, such roosts as they prefer through the varying seasons, and secure them against frozen feet in the severest weather.

The plan of inclined supports for the roosts seems to be the most economical as regards room. Each row of fowls is a little behind and a little above the one in front, and they are out of the way of each other. The past is the first winter during which my fowls have not frozen their feet more or less, though the mercury has been as low as 28° below zero."

Feeding Boxes for Chickens.

Authorities disagree somewhat about the desirableness of feeding boxes for chickens, but it is often a matter of convenience when fowls are confined in close quarters. It makes fowls lazy when they are wanted to forage for their own food and pursue insects, if they have all that they want to eat at home. We give drawings of two styles of feeding boxes, which are very easy to make, and very good. Take any small box, such as a candle or soap box, knock it to pieces carefully, and put it together again after cutting the pieces where necessary, and preparing other pieces for the bottom, or for the slanting pieces as may be needed. Fig. 1 shows a sectional view of one form, in which the food is exposed on the outside of the box; and this is the best form for indoor use. In this arrangement there is provided a slanting false bottom coming to the bottom about an inch or less back from the front, and the front comes

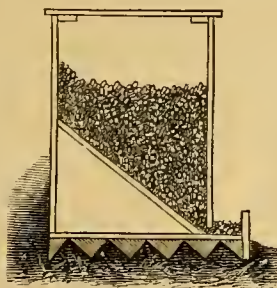


Fig. 1.

to within about half an inch from the bottom. This leaves a space across the entire front for the grain to flow out, and it is prevented scattering by the edge which is nailed on the projecting front of the bottom. The top of the box is made to lift off, and is also strengthened by cleats on the underside, which are so placed as to prevent the sliding of the covers. This plan is very similar to one sent us some time since by J. A. H., of Scarsdale, N. Y., which

suggested the form which we describe, and which in practice is found to work admirably.

The other form, fig. 2, has the advantage of keeping the grain away from the rain, so that the box may stand in the yard. The whole front is open, and the birds may walk in, or standing outside reach in, according to the depth of the box. A convenient size for this style of box is 2 feet high, 3 feet long, and 1 foot deep. The false bottom comes, as seen in the figure, within about an inch of the back angle, and a cleat is nailed 3 or 4 inches in front of where the grain pours out. These boxes should be set up a little above the ground, or they may be hung up on a fence or partition, upon nails passing through holes in the back.

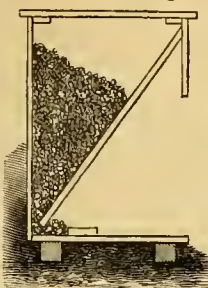
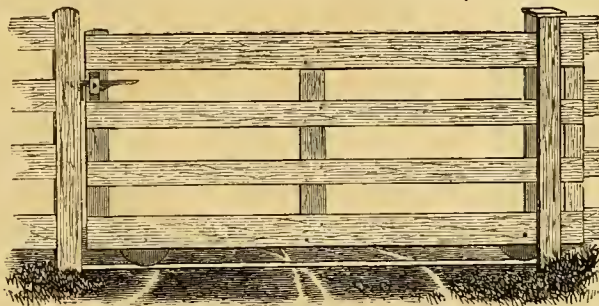


Fig. 2.

Another Farm Gate.

We have presented within a few months past several excellent forms of farm gates. Some are very cheap, and some less so, but more convenient. The plan which we now give was sent some time since to the *Agriculturist*, by Roswell Cook, Wayne Co., N. Y., and is durable and convenient. The only parts liable to especial wear being easily removed. He says of it: "I have used such an one at my barn-yard for eight years without any trouble or expense, except the removal of one pin through the wheel." "They may be made of light or heavy lumber as you please—I use hemlock. I take three pieces 2×4 inches for uprights; one bottom board is 8 inches wide, the other boards are 5 or 6 inches wide. On the opposite side I put a board at the bottom to hold the wheel pins, and one at the top so that the uprights will clear

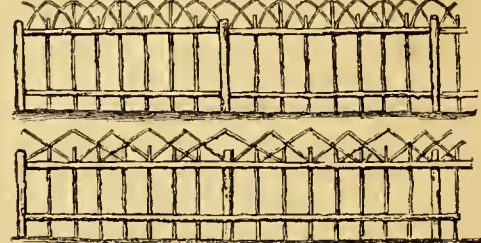


FARM GATE.

the stakes when the gate is run back and forth. The gate runs on two wheels, cut from hardwood plank, a little thinner than the uprights, so that they will turn freely between the boards. They should project 3 or 4 inches below the bottom boards. The wheels run on 1½-inch pins. The stakes or posts at the side by which the gate slides, should be 5 inches apart. It is well also to have two similar stakes for the gate to run into to give it firmness. I use no fastener, if any one wishes this he may nail a block upon the track plank which the wheel will roll over when it shuts. This will hold the gate where you want it." [Our engraving varies a little from the description at the latch end, but it will be understood. The objection to this arrangement is that in winter the wheels may be obstructed by snow or ice. A modification of the plan might be to have the axils of the wheels run through the posts, and the bottom-board run upon them.—Ed.]

Hints About Fences.

We have given elsewhere in this volume of the *Agriculturist* the views of several practical men about the cheapest fences that will turn common stock, several of their plain patterns were not ill-looking. Yet their good looks were no recommendation, utility being the only thing sought. We seek beauty in our horses and cattle, in our mowing machines and farm wagons even, and farm fences need be no exception. We have had this subject in mind for some time, and have taken a good look at any neat fence patterns we may have seen, and made a sketch now and then, the result of which we now give our readers. The cost of these fences we cannot state with any accuracy, and if we could, it would be of but little advantage, for the price of stuff and labor varies immensely in different parts of the country. The posts are supposed to be made all of good seasoned stuff, tarred and sanded, set fully two feet in the ground. The rails, either of sawed 2×3-inch, or 3×4-inch stuff, according to the span of the lengths, or the desired strength of the fence. They may be made, also, of 3 or 4-inch poles with the back one split in two pieces. The

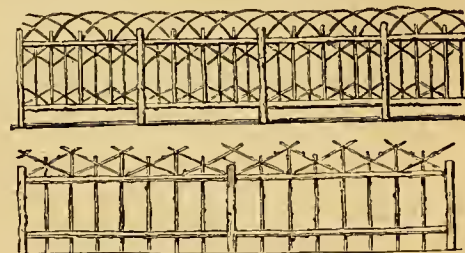


Figures 1 and 2.

paling and ornamental pieces are best made of red cedar, though almost any of our common woods will answer. These are nailed to the rails and to each other, or they are bound on where they cross one another with galvanized

iron wire. Figures 1 and 2 are simple and easily made, as indeed are 3 and 4, but figures 5 and 6 are a little more complicated, yet stronger in proportion, and would exclude pigs and geese, and perhaps other poultry very well. There is general complaint that rustic work, and fences of this kind, soon fall a prey to dry wood borers of two or three kinds. One of the most successful makers of this kind of work in this neighborhood in-

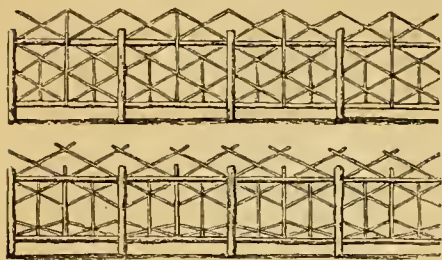
forms us that he soaks all his wood for use with the bark on, in sulphuric acid (oil of vitriol), diluted, but still quite strong. This entirely prevents the damage by insects. We think a solution of sulphate of copper or blue vitriol, espe-



Figures 3 and 4.

cially if the wood were long soaked, or if the solution were hot, would be as good to keep out borers, and it would kyanize it and thus defend the wood better against decay. It can

hardly be expected that fences of this description will be used very extensively upon the farm, but made immediately adjoining the house,



Figures 5 and 6.

they will improve the appearance, and thus add to the salable value of the place, besides giving much pleasure to the owner.

Dry Earth as a Deodorizer.

It is very seldom that one finds a privy in the country which is not a nuisance. Those who are careful and neat about most matters, generally utterly neglect this necessary appendage to their premises. It is well known that the pondrette which is made and sold in such large quantities is only night soil, deodorized by mixing it with the dredgings of a canal and drying it. It is commonly supposed that some particular kind of earth is necessary, and in the absence of that, none at all is used. Any kind of earth, well dried, and all the better if sifted, will answer to mix with the night soil. The Rev. H. Moule, of England, states, that he finds that the earth after being used once and then thoroughly dried, is equally as efficacious as at first, and that he was using the same earth for the fifth time, the resulting compound being so perfectly odorless, that a person unacquainted with its composition would not suspect what it was. Aside from considerations of comfort and health, this plan is worth adopting for the value of the resulting manure. He says:—

"A farmer and several laborers to whom I mentioned the following simple plan at once entered into it: the present vault is to be discontinued, and in the place of it there is to be under the seat a small enclosure of brick or stone, six or nine inches deep. To preserve the full value of the manure for the garden, the enclosure should be paved, or have a flat stone for its bottom. It would, of course, be closed with a door. On one side would be a small rough shed, capable of covering and keeping dry a cart-load of earth for the purpose of mixing, and on the other side a similar shed into which the soil so mixed would day by day be thrown, for the purpose of drying. When dry, this would be used again, and the uses of the two sheds be reversed. By thus repeatedly using it, and shifting it backwards and forwards from one shed to the other, one load of earth will be found sufficient for five persons, certainly for six months, and, I believe, for twelve. This is the simplest, but by no means the least offensive mode of applying this remarkable agent."

Willow Hedges.

The vexed question of living Willow fences, is thus treated by our correspondent G. G. Greene, of Hudson:

I have heard much complaint from persons who have undertaken to make hedges of willow, that they were unable to make them grow, or that they died out in places after having started.

The soil at times may have been too dry and poor, or they were not properly put out or cared for: the following plan which I have followed with very great success, will, I think, ensure a hedge in almost any soil, and at almost any season. In cutting or trimming up old willow trees, I take the limbs varying from two to six inches in diameter, cut them up in pieces as long as they will cut tolerably straight, say four, six, or ten feet long. I plow a furrow if practicable, just where I desire the fence, or dig a shallow trench, placing these pieces in the trench in a straight continuous line, and cover them up with earth; if the soil is wet, I leave the tops exposed, if dry, I cover, say an inch in depth: the sprouts spring up very rapidly, much thicker than they can be grown in any other way, and they will make as much growth in one season as they will in two years by the ordinary mode of planting. They make a better hedge than can be grown of willow in any other way, for these reasons:

They are sure to grow; the sprouts come up so thick as to admit of being trimmed the first season, and they grow more rapidly than in any other way; their roots are one continuous mass and the fence can not be pulled up or blown down; they do not die out in places; they can be grown on any kind of soil; *they will make a fence cheaply and effectively, which can not be said of half the willow hedges I have seen.*

In the fall a furrow should be turned up against them, and at the proper season they may be trimmed to suit the owner's views.

Along water courses, where the soil is in danger of washing away, they answer an excellent purpose planted in this way, as their roots penetrate the soil rapidly, and soon link it together in a firm mass.

The Mole-Cricket. — (*Gryllotalpa borealis*.)

A correspondent sends us a specimen of an insect found in his potato ground, and wishes to know what it is. It is the American Mole-Cricket, and as it is an interesting and not very common insect, we have had its portrait taken, to enable others to see what it is like. The scientific name, *Gryllotalpa*, means Cricket-mole, a name which the peculiar structure and habits of the animal readily enough suggest. The engraving is of the natural size; the animal is covered with fine velvety hairs, and is of a drab



MOLE CRICKET.

or fawn color. The wings are so short as to be insufficient for flying; but what the insect lacks in this means of locomotion is made up to it in the size and strength of its enormous fore-legs, which are especially adapted to its favorite mode of travel—that of burrowing through the ground like a mole. By means of these excavators, the Mole-Crickets push long galleries through the soft earth, and where they are numerous, do much damage. With us, the insects are not sufficiently abundant to be troublesome, but in Europe a related species is one of the pests of the garden, especially in the warmer countries. While Harris states that they live upon the tender roots of plants, the recent French authors say that their food is entirely insects and their larvæ, and that the damage they do to plants is only in cutting off the

roots of such as come in the way of their underground engineering. In some parts of France they are so destructive in hot-beds, that it is necessary to drench the manure with hot urine before making up the beds.

More About "New Peas."

In May last, we gave some account of the trials of new peas by the London Horticultural Society. A venerable Connecticut correspondent thus recounts his trial for the *Agriculturist*:

"'Carter's First Crop of Peas.'—I hope he may never raise a second crop of peas, or any other seeds. I think the real value of them by the bushel would be from \$1.25 to \$1.50. I was so foolish as to pay \$1.50 per quart. I had them planted very early, intending to beat my neighbors, who planted the good old kinds. The result is a monstrous crop of vines, seven feet high, and still growing. They remind of the story my good mother told me 70 years ago, of Jack the Giant Killer's Bean, which grew up to the moon. About three weeks after the Carters were planted, and well up, I planted a few rows of Dan O'Rourke. The result is, the O'Rourkes are in full bearing, while the Carters are just beginning to show small pods, which look as if they might have a few peas in them some time. The originator of the fraud ought to be indicted for swindling, and every dealer that bought of him ought to refuse to pay for them, if he has not already got his pay; and if he has, to follow him up, and make him refund the money if possible. I bought from seedsmen in good repute; but seedsmen in good repute do very wrong to sell seeds of any kind that they know nothing about, and to advertise them to be two weeks earlier than any other kind, and 2½ feet high, when they are four weeks later, and mine will, undoubtedly, be ten feet high or more. I do not care for the money spent, but I do for green peas."

More About Mildew.

In June last we gave an account of the uses of sulphur, for stopping the ravages of mildew. Since then we have seen in the *Floral World* a letter from P. Lazaris, Athens, Greece, in which he gives an account of his experiments with sulphur, a highly sulphurous earth and common clay. Mildewed vines seemed to be equally benefited when dusted with either of these, while vines along side of those thus treated, but to which nothing was applied, were injured by mildew. Mr. L. thinks that the sulphur exercises no specific influence upon the mildew beyond that of any other powder, and attributes the whole curative effect of sulphur or any other powder to its power of absorbing moisture from the mildew fungus, and thus destroying it. We think Mr. L.'s views worthy the attention of grape-growers, especially as we have somewhere recently read—where, has escaped our memory, or we would give credit—of a grape-grower who, falling short in his supply of sulphur, used lime and ashes, and thought them more efficacious than sulphur. In some parts of Europe road-dust was used, some years ago, with alleged efficacy in preventing mildew. If these several experiences in using dry powders are reliable, we must then conclude that sulphur may prevent mildew in two ways; 1st—by its emanations when used, as it often is under glass, sprinkled on the ground and on the flues; 2d—by acting as an absorbing powder when dusted on vines out-of-doors. This is an inter-

esting question, and one which, we hope, our grape-growers will settle, using very dry and sifted clay or road-dust, in comparison with sulphur, and report the results.

Notes on Strawberries.

A hard winter, and a cold spring with late frosts and cold cutting winds, have made the strawberry crop as a whole, a failure. Here and there a field has yielded well, but these are exceptions. We attended the recent Pittsburg meeting of the Penn. Fruit Growers' Society, where, besides Pennsylvanians, there were gentlemen present from New Jersey, New-York, Ohio, Indiana, Illinois, and Missouri, all of whom told the same story, and variously estimated the present year's crop, at $\frac{1}{2}$ to $\frac{1}{4}$ the usual amount. In the extensive grounds of Mr. Knox, the crop will not exceed $\frac{1}{4}$ of that of former years.

With regard to varieties, we are no nearer any definite result than before; and it is not possible to say, what one, or what dozen varieties are best for all soils and localities. The difficulty in making up select lists of fruits which shall answer for a wide range of country, becomes manifest when we bring together the experiences of cultivators in widely separated localities, not only in our own country, but abroad. An instance of this is found in the list of 25 strawberries, recommended last year by the Imperial Horticultural Society of France. Ever since the appearance of the list, the journals of that country have been full of criticisms, so severe that one is almost induced to believe that the Society had proposed the twenty-five worst instead of the twenty-five best varieties.

Wilson's Albany is the variety more generally cultivated than any, perhaps than all others; yet, in some places, it is perfectly worthless and quite given up. The "Agriculturist," in Southern New Jersey, is likely to be the leading variety. Indeed, the only really good crop of strawberries we have seen in quite extended tours, was of this variety, in the grounds of Mr. William Parry, of Cinnaminson. Its yield there is something so remarkable, that he and his neighbors speak of it in terms of the greatest enthusiasm, and will plant very largely of it; and we have similar reports from some other localities. Yet this same variety, in the grounds of Mr. Knox, near Pittsburgh, has a very poor show of fruit. These facts demonstrate the value of local experience. The strawberry is so easily multiplied, comes in fruit so soon, and the varieties are so numerous, that it is an easy matter for each large grower, or for each local society, to soon find out, by actual test, what kinds are best suited to their conditions of soil, etc.

In the methods of cultivation, we also find diversities of opinion. In some parts of Illinois, the plants are set and allowed to cover the ground; they get very little attention, and when they cease to yield, they are plowed under. In Southern New Jersey the plants are allowed to cover beds three and a half or four feet wide, with two feet alleys between—the bed receiving in early winter a dressing of fine stable manure, but no mulching of straw. These beds bear one and two years. In hill, or stool culture, as extensively practised by Mr. Knox, the plants are set 18 inches apart, in rows 18 inches from each other. In autumn the ground is well mulched with straw, and the plants lightly covered. In spring the straw is opened directly over the plant, but is not removed. As the runners appear, they are pinched off; or, if allowed to get too strong for pinching, they are cut

with a knife. The weeds that appear near the plants are pulled by hand, and those that come up through the straw between the rows, are removed by the hoe. But few weeds make their way up through a heavy mulch, and these are destroyed very easily. The hills keep in bearing three or four years, and the mulch is kept on all the time, replacing each year the annual waste from decay, which amounts to a fourth or a third of the original quantity. That this careful culture with many varieties, especially those of European origin, will give better results than allowing the plants to run, there is no doubt; but, that it is the best for all kinds, we are by no means certain. We have nowhere seen the Agriculturist producing as well when kept in stools, as where it is allowed to cover the ground with its vines, and, we may say, with its fruit.

Unusual Ways of Fruit.

We are so accustomed to see flowers depart from their natural form, that the deviation does not strike us as anything remarkable. Indeed our most beautiful double flowers are as far from the natural condition of things as possible. A monstrous fruit is more rare than a monstrous flower, and we sometimes meet with cases in which the departures from the usual way are curious and interesting. A strawberry was sent us by a correspondent, which bears upon its upper end, or the one farthest from the calyx, a tuft of leaves. We do not recollect to have ever before seen a similar instance, yet it is just what we might expect would occasionally occur. Though we call a strawberry a fruit in common language, it is not so in the strict sense of the word. The fruit proper is those little grains that we usually call seeds. These are minute one-seeded nuts distributed all over or sunken into the surface of the enlarged and fleshy end of the flower-stalk or stem. As the strawberry then is a bit of stem, very much changed from the way



Fig. 1.



Fig. 2.

in which we usually see stems, and made to serve a certain office, it is not so very strange that it should sometimes sport, and that its real nature should manifest itself by bearing leaves as in the case before us. Another sport, perhaps not so striking, but to us still more curious, is the double cherry, fig. 2, one of some dozens brought us by Mr. Thompson, of West Farms. It is the usual way of the cherry to have a single pistil which ripens into a single fruit. It is not unusual for cherry flowers to become double, by an increase in the number of petals, but when they do this the pistil becomes abortive. In the present instance, as near as can be judged from examining the fruit, and without seeing the blossoms, it would appear that two pistils were produced in the place usually occupied by one. Sports like these are not only curious, but they are of great interest to the botanist, as they often give him an insight into the real nature of parts.

Urine as a Liquid Manure.

A writer, in the *Gardener's Chronicle*, (Eng.), finds urine a most valuable fertilizer, when used in the following manner:—Human urine, free from other slops, is allowed to get quite stale, which in a moderate temperature it will do in about a week. In this condition it is strongly alkaline, and will turn red litmus paper blue. To the urine in this condition, sulphuric acid (oil of vitriol) is gradually added until it is slightly acid, which is known by its turning the blue litmus paper red again. The amount of acid required, is about two ounces to each gallon of urine. To neutralize any excess of acid, add about 2 ounces of ground chalk to the gallon. Of the liquid thus prepared, one pint, after stirring it thoroughly to diffuse the settlings, is diluted with one or two gallons of water, the latter proportion being strong enough for most plants, and applied at once. This manure has been found very serviceable on grass plots in England, and may be applied wherever guano or other ammoniacal manure would be admissible. The litmus paper is paper colored with an infusion of litmus. It is blue or red, according as it has been subjected to the action of an acid or an alkali. The paper, or the litmus itself, may be had of any good druggist.

Stopping the Bleeding of Vines.

Though too late for use this year, we give two methods recently proposed. A correspondent, "C.," writes, that having to move an old vine, he cut it back and covered the wounds with copal varnish with success, and that he has since used the varnish when obliged to prune in spring, and finds it stops the bleeding. A writer in the *London Journal of Horticulture*, wipes the end of the vine dry, and covers it with a stiff paste of cement (hydraulic lime). The application is repeated two or three hours after the first one, and the bleeding effectually stopped.

The Introduction of the Verbena.

The following notes in relation to the introduction of the *Verbena* into this country, are from Mr. Amory Edwards, of Elizabeth, N. J. It will interest the admirers of this now very common and popular plant to know something of its early history.

"The *Verbenas* are natives of Buenos Ayres, and were first noticed by John Tweedy, who was collecting plants for the Conservatories of the Earl of Derby, and a firm in London.

In 1834 and 1835, I frequently accompanied Mr. Tweedy, a Scotchman, and a hearty lover of flowers, who was then about sixty years of age, in excursions around Buenos Ayres, and as I was about sailing for New York, he gave me a plant of the *Verbena Tweediana*, [now called *phlogiflora*.—Ed.] (red) and a fragrant white one, together with some seed of the Scarlet *Petunia*. These plants I gave in Sept. 1835, to the late Thos. Hogg, who then had a garden near the House of Refuge, now Madison Square, and he told me that they were the first *Verbenas* ever in this country, and the first Scarlet *Petunia*. A white *Petunia* had been received before.

Grant Thorburn, in 1837, received a plant of *Verbena Tweediana* from London, where he told me that it cost him two guineas.

Most of the stock now in the gardens in the United States is from these plants, originally there were but two colors of each—red and white."



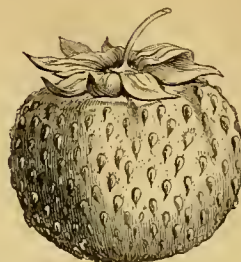
SCOTCH RUNNER.



SCOTCH RUNNER.



GREEN PROLIFIC.



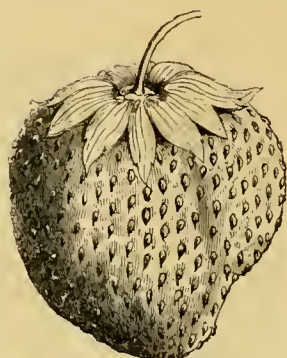
GREEN PROLIFIC.



GOLDEN SEEDED.



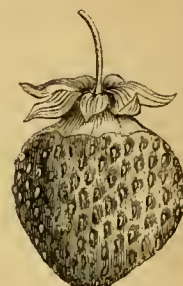
WARD'S FAVORITE.



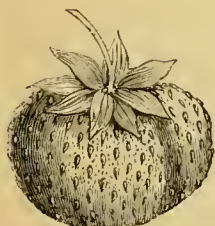
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AGRICULTURIST. (Field Culture.)



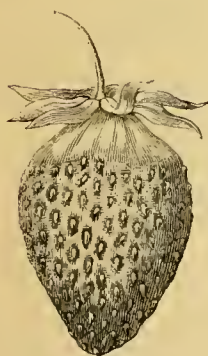
PEABODY.



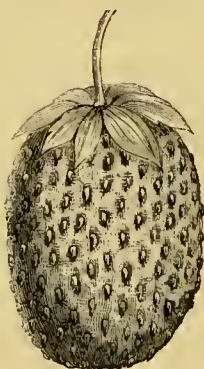
WARD'S FAVORITE.



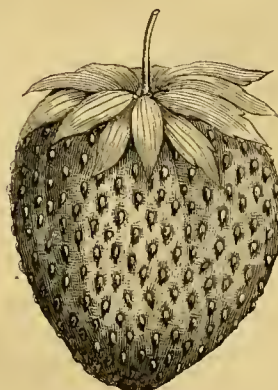
"BURR'S NEW PINE."



N. J. SCARLET.



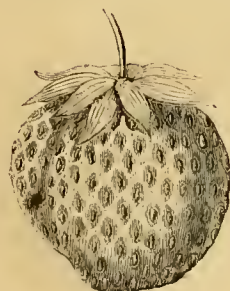
DURAND'S SEEDLING.



DURAND'S SEEDLING.



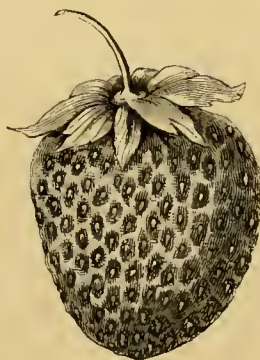
LADIES' PINE.



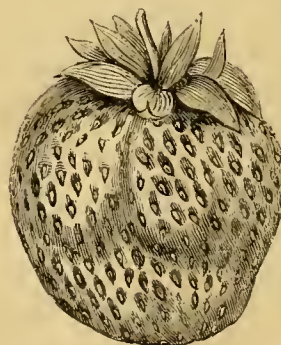
PERRY.



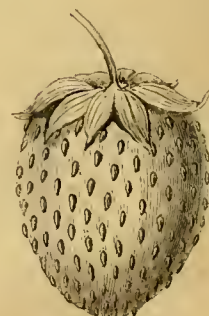
LADY FINGER.



LADY FINGER.



"GOLDEN QUEEN."



MEAD'S SEEDLING.

SOME OF THE LEADING VARIETIES OF STRAWBERRIES—NEW AND OLD.

Cedar Apples.—(*Podisoma macropus*.)

Those who have been much acquainted with the Red Cedar (*Juniperus Virginiana*), must have noticed the peculiar excrescences which are often seen upon the small twigs, and which are known by the popular name of "Cedar Apples." They are of an irregularly rounded shape, at first very small, but increasing in size until they reach that of an inch or two in diameter. They are often found completely encircling a small twig. Externally they are covered by a brownish purple rind, or skin, which has its surface thickly covered with circular or obscurely angled markings, with an elevated or embossed center. Upon cutting the mass, it is found to have about the consistence of a green apple, is whitish within, and a careful inspection with a good magnifier will show here and there some exceedingly minute white fibres traversing its substance. These cedar apples are by most persons thought to be of the same nature as "Oak Apples," and other galls, and to be caused by the presence of an insect. All excrescences upon plants are not the work of insects, and this, and the black knot upon plum and other trees, are instances in which parasitic plants are the cause of the abnormal growth. If, during a warm and long continued spring rain, one visits the trees where cedar apples are plenty, he will be surprised at the change that has been wrought. The apples will appear more than twice as large as before, and of so beautiful a color that they might well be called "Cedar Oranges." A closer inspection will show what has caused this change. Each one of the little elevations of the surface, before mentioned, will be found to have burst, and from the opening protrudes a thick orange colored string, an inch or more long, translucent, and quite gelatinous in consistence. A brilliant orange colored dust will often be noticed upon the surface of the strings and also sprinkled around on the neighboring leaves, branches, etc.

A few hours of hot sun, and the strings wither, become brown and inconspicuous, and finally drop off. They may be made to develop artificially by placing the apples in a moist atmosphere. The one from which the engraving was made, was brought out by suspending it in a large bottle over water, and setting it in the sun. The one figured does not show the twig passing through the apple, as it commonly does. nor does it show the threads in their most swollen state; with abundant moisture they become so large as to completely hide the central portion or "apple." The microscope shows the threads to be the *sporidia*, or seed vessels, (fig. A,) of a fungus—*Podisoma macropus*—united into a mass by means of a gelatinous substance. And the dust above spoken of is the exceedingly minute spores, or bodies answering, like seeds, to reproduce the fungus. The fungus, or plant itself, lives within the apple in the form of the minute fibres which ramify through its substance, forming what botanists call a *mycelium*, and which corresponds ex-

actly to the spawn in the mushroom bed, while the showy orange colored threads answer in nature to the mushrooms themselves. The presence of this parasitic plant growing within the tissues of the cedar twig, causes it to take on an unusual growth, and makes the swelling or apple, in a similar manner that the presence of a foreign body of another kind, the egg of an insect, causes the growth of a gall. We have seldom known these to be so abundant as to ap-



CEDAR APPLE.

parently injure the tree, and they are quite ornamental during the damp weather of spring. If they are too numerous, cut off and burn them. Observers differ as to the duration of the fungus; we are inclined to think that those who say that it lives several years are right. The Black-knot is very similar in its nature and manner of growth to the cedar apple, except that the fruiting portions are minute, black and inconspicuous.

Strawberries—Notes on Varieties.

At the close of the season of strawberries, it will be expected that we follow our usual custom and give some notes on varieties. The task is not an easy one, and to give an opinion about strawberries becomes yearly more and more difficult. Varieties of this fruit are so easily multiplied that some cultivators number their seedlings by thousands. Among these numerous seedlings a great many will be apparently too good to throw away, and yet no better than those we already have, but the partiality of the raiser will induce him to see superior qualities in them, and they will be put upon sale, to increase our list of kinds, and possibly replenish the pockets of the grower. There are many who consider size a prime requisite in a strawberry. We think it one of the least importance, beyond a certain limit, and the chief advantage in large size, is facility in picking. We do not object to size, but hold that quality and productiveness are far more important. The amateur and market grower look

for quite different characters; with the market man flavor is nothing. If a berry produces well, carries safely, and is showy, he knows that it will sell, be it as sour as crabs, or flat and insipid. The amateur puts quality before everything else, and rejects those fruits that upon the palate break the promise they have made to the eye. For the market garden it is best to have the crop ripen up rapidly, so that it can be taken in a few pickings, while in the family garden

it is desirable to have a variety continue long in bearing and give a moderate supply through as long a time as possible. We mention these points in order that our readers may understand one reason why different people give such discrepant accounts of the same fruit. In many of the larger kinds of strawberries we find imperfect fruit. Often the apex, or that part farthest from the stem, is not filled out, and is very seedy. Though the flowers are perfect, the pistils seem out of proportion to the stamens, and there does not appear to be sufficient pollen produced to fertilize the central pistils, and we have on this account an imperfect development of the fruit. This difficulty is obviated by taking care to set the sorts in which it occurs in the vicinity of those kinds that produce an abundance of well developed stamens.

For the engravings given on the opposite page, we have endeavored to select specimens of medium size, and not above what may be expected in ordinary field culture. It would be easy to represent much larger berries of each variety, but our wish is to

give the characteristic shape and average size.

The following notes on varieties are given in the order in which we find them in our memorandum book. A number of old sorts are included, for in our desire to keep pace with novelties, we do not wish to overlook the merits of the older kinds. In speaking of some of the newer kinds, we are not, perhaps, as enthusiastic as those who are interested in them may desire. We speak of the fruits as they seem to us. Those who are engaged in introducing new varieties usually take care that the public shall know their views of them through the medium of their own catalogues and advertisements.

New Jersey Scarlet.—H. A medium sized conical fruit, of a lively scarlet color. Very early, and as a market fruit, is much prized on the light soils of Burlington Co., where it originated. The fruiting period was nearly over when we saw it, but we are convinced that it is a very early and productive market variety.

French's Seedling.—H. An oval berry, often of large size, light scarlet, very productive and of fair quality. Good for a near market, but too soft for distant transportation. One of the standard varieties in Southern New Jersey.

Ward's Favorite.—P. Small to medium, globular or depressed; seeds very numerous, sunken; rich crimson, and when fully ripe, very dark; flesh firm, solid, colored throughout, not very juicy; sweet and high flavored. An old variety introduced by Doct. I. M. Ward, of Newark, N. J., and has the reputation of being a poor bearer, but with good culture it yields very fairly

and is worthy the attention of those who prefer quality to quantity.

Ladies' Pine.—*P.* Fruit small, round, pale orange scarlet, not very firm; sweet and of the most delicious flavor. Despite its small size and unpleasant color, this is the very best berry, as to flavor, with which we are acquainted; unfortunately it is not productive, and it commends itself only to those amateurs who prefer a quart of good fruit to a bushel of poor. It is well to have a bed of this as a standard of flavor, and very few varieties can stand its test.

Burr's New Pine.—*P.* A medium sized, conical, light scarlet berry, very early and producing well with good culture. Mr. Knox regards it as his most valuable early variety. This is in most collections under the above name, but Ohio pomologists declare that this berry is not the true Burr's New Pine, which is a much lighter colored fruit, and is now, as far as they know, lost to cultivation. Whatever the berry may be that now goes by the name of the "lost tribe," it is a fruit of great excellence for the family garden or for early marketing.

Agriculturist.—*H.* This variety was fully described, and some of the larger specimens figured in August, 1863, and we now engrave an average specimen from a basket put up for market, from a bed which had been allowed to run. We have no interest in this variety, other than that which naturally comes from the fact that we were instrumental in introducing it, and in disseminating it free, more widely than any other variety was ever distributed. We of course wish it may do elsewhere as well as it has done with us. That it would do so everywhere, was not to be expected, with this or any other fruit. In some places it has not borne well, but in the majority of instances, it has proved valuable, and there is, perhaps, no one variety that may be planted at a venture more safely than this. The only very large crop of strawberries we have seen this season, was at Mr. Parry's, Cinnaminson, N. J., of this variety. We saw good crops of it at Mr. Pullen's, Hightstown, N. J., E. S. William's, Montclair, N. J., a fair one at F. Brill's Newark, N. J., and a poor one at Mr. Knox's. It is perfectly hardy and fruited this year where the Wilson failed.

Green Prolific.—*P.* Fruit large, depressed globular; seeds slightly sunken; pale orange scarlet; flesh solid, colored, soft, very juicy, acid and not high flavored. As a fruit this can not rank as first class, but it has an unequalled vigor of foliage, great productiveness, large size, and showy color, and is altogether a variety of remarkable character, and will commend itself to those who do not look for high quality. This is one of the parents of the Agriculturist which is a cross between this and the next.

Peabody.—*H.* Fruit medium to large, of a rich crimson color, and with a long distinct polished neck; flesh solid and colored to the center; sweet, and of excellent flavor. This is an old variety, which originated in Georgia. It is a poor bearer, and we only mention it by the side of the Green Prolific, as being the other parent of the Agriculturist. We have examined several hundred seedlings of the Agriculturist and found many plants with fruit which seemed quite like that of one or the other parent.

Durand's Seedling.—*H.* Fruit large, of a peculiar oblong shape, and flattened; seeds but slightly sunken; color, a peculiar light bright scarlet; flesh firm, solid, nearly white; juicy and well flavored. This we have only seen in the grounds of Mr. F. Brill, Newark, N. J., where

it seems to be an abundant bearer, and to produce fruit a long time. From what we have seen of it, we regard it as a variety of great promise for family and market purposes.

Perry's Seedling.—*H.* Fruit medium to large, nearly globular, with a slight neck; seeds depressed in well defined cavities; color bright crimson; flesh colored, but not uniformly so; moderately firm, sweet and with a rich sprightly flavor. Introduced by Geo. Perry & Sons, Georgetown, Conn. We have seen the fruit only of this variety, and it appeared to be like McAvoy's Superior (unwarrantably called Buffalo). It is sufficient praise to this fruit to say that it is as good as the McAvoy, and we have the assurance of the proprietor that it is perfect, hardy, and very productive. To be looked after.

Mead's Seedling.—*H.* Fruit conical, often flattened, and with an obtuse apex; seeds prominent, and when fully ripened, much darker colored than the lively light crimson of the surface; flesh very solid and firm, juicy, and of a sprightly, but not very high flavor. This variety originated with Peter B. Mead, Esq., and has merits which should not be overlooked. We have not seen any but recently set plants, and can only quote others who say that it produces well.

Jueunda, 700.—*H.* Fruit large, conical, regular in shape and size; bright crimson; flesh firm, white, hollow, juicy, and of a flavor that will please those who like Triomphe de Gand. This variety has been described by Mr. Knox, as well as by horticultural editors and committees, and we feel a little hesitation in giving an opinion after so many distinguished persons have put themselves on record. In this disastrous year it is the best producer Mr. Knox has upon his grounds, and with his system of culture, has a good crop. The fruit is large—very large—showy, of good shape, and carries well, as we know from the state in which we found a basket which reached home on the fourth day after picking. These are all good qualities, but its flavor is not to our individual taste, it being much like but hardly equal to that of the Triomphe de Gand, which is not a favorite with us. On good soil, and with close culture, it produces a great crop of large and very showy berries.

Golden Seeded.—*H.* Fruit medium to large, bluntly conical, and flattened, crimson, with prominent yellow seeds. This was produced by Mr. Read, the originator of the Ladies' Pine, and is not generally cultivated. Mr. Knox regards it as one of his best early varieties, and it is productive and showy, and a valuable market variety with him. Not esteemed at the East.

Lenny's White.—*H.* Globular or depressed, white with a fine blush; flesh solid, buttery, and of excellent flavor. This variety is called White Pine Apple, and by several other names. It is a specialty with Doct. Hexamer, of Westchester Co., who raises it in great perfection. It is really a fine fruit, very productive, and the best of all the white strawberries.

Lady Finger.—Elongated conical, sometimes broadly so; seeds sunken deeply in well defined depressions; color brilliant scarlet; flesh solid, remarkably firm, somewhat colored, not very juicy; sweet and of good flavor. This variety originated in Burlington Co., N. J. Mr. Williams of Montclair, N. J., states in his catalogue that it combines more good qualities than any other berry that he grows. It is certainly a most handsome fruit on account of its brilliant color, and beautifully honeycombed surface, has a firmness that is unusual, and with good culture produces fair crops. Scott's Seedling, a very different fruit is sometimes sold for it.

Scotch Runner.—Under this name there are brought to the N. Y. market great quantities of a small berry, much like the Lady Finger as to color and surface, but much smaller, and more acid. It is a more generally elongated fruit. It is also called "Pine Apple" and Scarlet Runner, and probably has other synonyms. It is small, very showy, of a good strawberry flavor, and an esteemed market variety.



Fig. 1.—A magnified flower of a common green Orchid, called by Botanists *Platanthera orbiculata*; front view. a—One of the two pollen-masses with its stalk and sticky disk.

Insects and Plant Fertilization.

THIRD ARTICLE.

If there ever was a flower made for being fertilized by moths or butterflies, and absolutely dependent on their aid, it is one like this Orchid, fig. 1, a flower from the larger Green Orchid, called in strict botanical language, *Platanthera orbiculata*. The same may be said of most Orchids, although the ways, or contrivances, as we must call them, are different in the different sorts. Four years ago Mr. Darwin published a most interesting volume "On the various Contrivances by which British and Foreign Orchids are fertilized by Insects," which opened up this whole subject. This Green Orchid will show in a general way what takes place in all our Orchids, although some are arranged to be served by insects of a certain sort or size, and some by another. Take this, then, as a specimen.

The greater part of the centre of the blossom, Fig. 1, consists of the anther, the two cells of which, splitting down lengthwise, show the pollen within, and are continued forward into the two widely separated horns. Each horn bears at its tip a miniature button (the disk), the face of which is very sticky and will adhere to the finger or whatever you touch it with. As you remove the finger, you bring away, sticking to it, this little button or disk and all that belongs to it, viz.: the whole contents of the anther-cell, fig. 1, a. The button, it appears, is borne on the end of a slender stalk; and the large mass at the other end of the stalk is the pollen, not here a light powder, as in most plants, but its grains are stuck together in little masses or coarse grains, and these grains strung together and tied fast to the main stalk by threads as

delicate as spider-web, and as elastic as India-rubber. The surface just under the anther and in the angle between the horns is the stigma. This is quite as sticky as the disks are. Now

fully an inch-and-a-half long, actually do visit this flower, we have undoubted proof. They have been captured with something queer hanging from their protuberant eyes, sometimes one from each eye; when brought to us for examination, we have identified the strange body (by a peculiarity not represented in the figure *a*), to be the pollen-mass of this very Orchis, or of another species very like it. Then, on bringing the head of this butterfly, or any other of similar size, over the orifice of the honey-tube, just in the position it must occupy when the long proboscis is thrust down to the bottom of the tube, each eye comes in contact with one of the sticky disks. Withdraw the head after a few seconds interval, and the disks stick fast, bringing away with them the attached pollen-masses, leaving their cells empty. On inspecting a spike of flowers, we shall be apt to find that most of the blossoms towards the bottom, which have been longest open, have lost their pollen-masses. We see how they must have been carried off. It is very unlikely they could fall out of

by which winged insects are solicited to do the work for sedentary flowers.

Different Orchids show very different but equally effectual arrangements for the same end. In our pretty *Arethusa*, for example, the



Fig. 2.—Flower of Yellow Lady's Slipper, *Cypripedium pubescens*, of the natural size.

we should remark that our figure, made from a drawing many years old, when these nice adaptations were unthought of, is not quite correct; the horns do not diverge so much, and the sticky buttons face forwards and a little inwards, nearly a quarter of an inch apart, one on each side of an open orifice, just between the stigma and the long and narrow front petal. This is the orifice of the spur, a long and narrow sac, the bottom of which contains honey or nectar. The plain object of this is to attract honey-feeding insects. The honey-bearing sac in this instance being from $1\frac{1}{2}$ to 2 inches long, with the nectar dripping to the bottom, the only insects which can make it worth their while to visit this

their place; it is next to impossible that one would ever fall upon the stigma, near by as it is, if the flower were let alone; while no butterfly or moth, with head about a quarter of an inch broad across the eyes, approaching it from the front—where the dependent narrow petal offers a favorable landing place,—could here drain the cup without showing the marks of it about his eyes. Suppose, after rising with one of these appendages fixed to either eye, the insect were to settle back again into the same position,—which is not likely. If the stalks of the pollen-masses remained stiff and motionless, obviously nothing would come of it. But, on manipulating with a butterfly's head, or with the point of a pencil as a substitute, we find that the stalk of the pollen-mass bends downwards and forwards within a few seconds after extraction (by a very peculiar movement), so that the two become parallel, or even converge instead of diverging as at first. If now the head be brought again over the orifice, the broad ends of the pollen-masses, one or both, will hit the stigma, will adhere to its sticky surface, and as we pull away, either the disk will separate from the insect's head, leaving the whole pollen-mass on the stigma, or more commonly only those portions of the pollen-mass which had actually stuck to the stigma are torn away by the rupture of their elastic connecting threads, and left behind.

In this way it is certainly possible that a stigma should get the pollen of its own flower; but not probable, for when the insect had drained one flower it would fly to a fresh one, and give to that some or all of the pollen taken from its neighbor, taking away its pollen in turn, and so from plant to plant. To cross the flowers of the species is plainly the object of the whole contrivance, and an admirable contrivance it is,

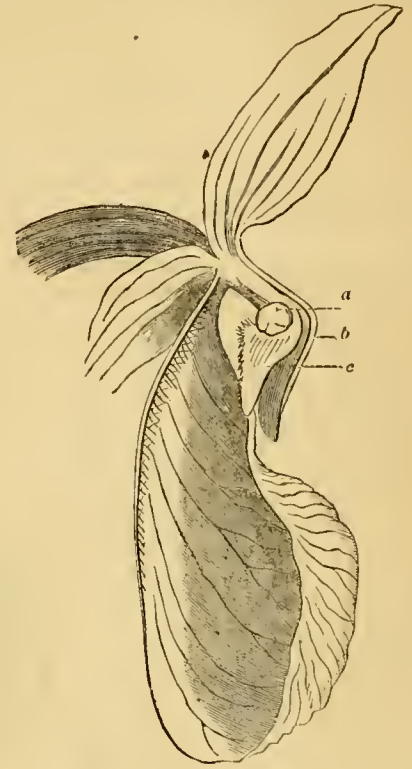


Fig. 4.—Section of the slipper, stigma, etc., of the Stemless Lady's Slipper, *Cypripedium acaule*, natural size. *a*, Anther; *b*, Sterile Stamen; *c*, Stigma.

pollen is rather powdery, the grains loosely held together by delicate threads, and contained in a helmet-shaped anther which is inverted on a shelf, the underside of which is stigma; and the anther is hinged at the back, and may be raised like the lid of a coffee pot; its front edge, the visor of the helmet, just projects a little beyond the shelf, as the lid of a chest does beyond the body, for the convenience of lifting; and when raised, the pollen tumbles out. Now a bee, entering the mouth of the flower over the crested front petal, sucks out a little nectar from the bottom of the narrow cup, which is over-arched

by the upper petals and the long curved style carrying on its apex the stigma and the anther as above described,—Pyramus and Thisbe very near each other, but with a solid wall between, so that communication is quite hopeless. The bee is not likely to help them directly. But as it backs out of the flower, and raises its head to fly away, it knocks up the lid by hitting the projecting rim, and catches some of the loose pollen on its rough and bristly forehead, enters with this into the next flower, where, when it retreats, it can hardly fail to dab this pollen on to the sticky face of the stigma, the instant before it raises that anther-lid and takes a new supply of pollen from this sec-

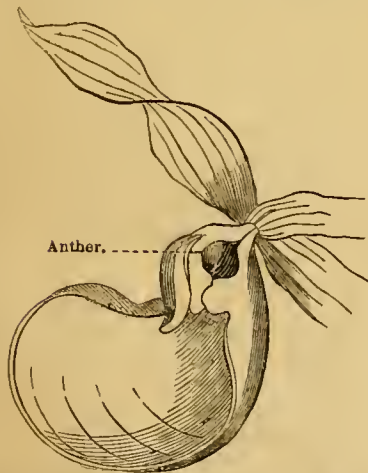


Fig. 3.—A partial section of the sac, stigma, etc., of the Yellow Lady's Slipper; anther, and one of the anthers.

flower are those furnished with a proboscis of nearly this length. Such are butterflies and moths, the former flying by day, the latter by night. That such insects, with proboscis

ond flower to the third flower, and so on.

Cypripedium, or Lady's Slipper, (fig. 2) although of the Orchid family, and equally dependent upon insect aid, gets its work done by a different class of insects and in a different way. The front petal, to which the honey-tube in *Orchis* belongs, here forms the great sac or slipper, and is the only showy part, the other leaves of the flower being dull greenish, or purplish. The slipper, which in shape might suit the taste of a Chinese lady, is open at the instep; and there the edges are rolled in, after the fashion of the entrance to a rat-trap. The central part of the blossom, which curves downward and is partly thrust into the slipper, consists of stamens, style, and stigma. The spade-shaped, petal-like body which covers the stigma, and is nearly all that is seen from the front, takes the place of a stamen, but has no pollen; underneath it is the broad stigma, which faces to the heel of the slipper, as is best seen in the partly sectional view, fig. 3, and in fig. 4; and just back of the stigma are the two anthers, one on each side. The back, or as we may say the sole, of the slipper, is lined with long hairs or soft bristles, and these appear to contain something attractive to insects. There is no honey in the slipper. The anthers are so placed that the pollen can never of itself fall on the stigma, nor be thrown upon it by the wind. Indeed, the pollen does not fall of itself; for, although of the appearance of a damp powder, or so moist in the yellow species as to be almost pulpy, the surface is covered with a thin film of sticky varnish. When touched with the finger, the varnish adheres, and brings away with it a layer of the pollen, of the size of the adhering surface.

Now, as to the fertilization. The flower left alone would be hopelessly sterile. Although we have never seen an insect spontaneously enter the slipper and do the work, we are about as sure that the work is done in this way, as if we had seen it. Probably it is visited by nocturnal insects. The slipper may be entered by the orifice in front, which, in most species, offers the readiest access; or, from behind, by crawling under either anther, and thence under the stigma into the main sac. A large fly, or a coleopterous insect of corresponding size, entering from behind, would probably hit the back of his head or eye against one of the anthers, and as he crept under the stigma, might lodge some of it there. Feeding upon the hairs as he passed on, the front orifice would be before him for egress; but its incurved border would interpose some obstacle. It offers none to entrance; and we presume that the insect enters at the front, and passing onwards, departs by the back door. In so doing, whether he turns to the right or the left, he must rub his head against an overhanging anther, and carry off a plaster of pollen. If he then passes to another flower of the same species, and enters it by the front orifice, as he proceeds towards the most practicable exit he must crowd under the stigma, upon which he will hardly fail to deposit some of the pollen brought from the neigh-

boring flower. Now, that this is really the way of it, that it is intended the insect shall enter at the instep and emerge at the heel of the slipper, and so bring the pollen of one flower to the stigma of another—is as good as demonstrated by the peculiar character of the surface of the stigma in this flower. It is not glutinous as in other Orchids, but only moist, and is rough to the touch. Under a magnifying-glass the roughness is seen to arise from the whole surface of the stigma being covered by sharp projecting points, or what would be rigid bristles

last anniversary of the society, and which sets forth its objects and progress. We notice this to give the Society our best wishes for its success, as well as to call attention to the utility of such institutions. Natural History Societies and Clubs are springing up all over England, an old country, which one would suppose had been so thoroughly explored, that there remained little to reward the naturalist. Yet this is not the case, for industrious workers are constantly developing there some new facts of interest. In a new country, like our own, there is greater inducement to the student, and there should be in every considerable village or town a museum of its natural productions of all kinds. These local collections have an interest to the community in which they are made, and are of great value to science, as they not only furnish important data upon the distribution of plants, animals, etc., but they preserve specimens of many things that are rapidly disappearing as the population becomes more dense. Such collections always increase with astonishing rapidity where a nucleus is once formed, and their utility in giving direction to the tastes of the young is incalculable.

House-Leeks and Stone-Crops.

There are some plants so very common that their beauty is unappreciated. The well known House-leek is one of these, and to us who like plants, even if they have not flowers upon them, this much neglected and even persecuted individual is a great favorite. The healthy green of its leaves, their symmetrical arrangement in beautiful rosettes, its tenacity of life, growing where scarcely any thing else will live, defying frost and drouth, but bright and cheerful under the most adverse circumstances, are qualities that commend it. To be sure it seldom flowers, but then its clusters of leaves are handsome enough to answer for flowers; they are much like green camellias. The botanical name is *Sempervivum tectorum*. *Sempervivum* means "always living," or "live-forever." The specific name *tectorum*, is from the Latin for roof, in allusion to its growing upon houses; and our common name, House-leek, refers to the same thing. It is an exceedingly useful plant for Rock work.—Another favorite of ours is a very old green-house species, *Sempervivum arboreum*, which we now rarely see, it having been crowded aside

by novelties that are often inferior to it. We were so much pleased to see a fine engraving of our old friend in the London Gardener's Magazine that we have reproduced it. The plant is of the easiest culture, and when well grown, makes a fine show. It needs to be kept in the house in winter. We have found to our sorrow that mice are very fond of this plant, seeming to prefer it to all others. There are several varieties, one with purple leaves, one in which the leaves are edged with red, and another in which they are beautifully striped with yellowish white. The whole family (*Crasulaceae*) to which these plants belong, is deserving more attention than it now has.



TREE HOUSE LEEK.—(*Sempervivum arboreum*.)

if they were longer; and these all turn forwards, so that the apparatus may be likened to a rasp, or to a hand wool-card of the olden time; and one cannot resist the conclusion that it is intended to card off and to retain the pollen brought upon the head of an insect entering at the front, and on its way to get out at the back part of the flower.—A more ingenious and effectual contrivance for crossing the flowers of a species by the help of insects, could hardly be devised.

A. G.

THE LINNEAN SOCIETY of Lancaster, (Pa.) City and County. We have received an essay by S. S. Rathvon, Esq., which was read at the

The *Crassulas*, *Rocheas*, *Echeverias*, and the large genus of *Sedum*, make up a vegetation peculiar in its aspect, and while many of them flower finely, they are interesting at all times. Among the *Sedums*, *S. Sieboldii* is a most interesting species. Its foliage is of a peculiar glaucous hue, it is hardy, and flowers profusely. Mr. Hogg has sent home from Japan a variety of this with mottled foliage, which will doubtless, if it proves hardy, be a popular favorite.

THE HOUSEHOLD.

A Home-made Lamp Bracket.

The following explains itself, so we offer no comments:

MR. EDITOR.—You said you admired the lamp brackets you saw at our house the other day, and as that pleases me well, I send you a description of how they were made, and, if you will excuse the egotism of my saying so—I must add that I admire them myself, not so much for their beauty,—you may pass judgment upon that—but for their utility. Well, then, you must know I have been trying a long time to get father to saw me out some semi-circular pieces of board, with brace pieces, to make them of, but it has been busy time with him and all the rest of mankind, so I could do no better than help myself. The



Fig. 1.

piece A, fig. 2, was made of a portion of the head of a nail keg, part being split off and the corners sawed square, and the sides thus formed rounded into the curve of the head as best I could with a hand saw. B, represents the brace, a triangular

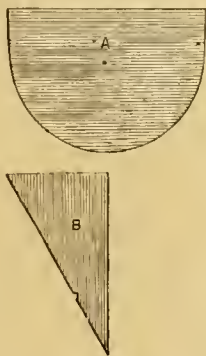


Fig. 2.

piece of $\frac{3}{4}$ inch clapboarding. Fig. 3 shows how the two, with one nail to hold them together, were nailed to the wall; one nail going through a gimlet hole at the notch in the brace piece, and another driven slanting through the top. I was lucky in striking studs in the wall. Before this, however, the cloth covering was tacked on to the top. This covering I made of plain muslin-delaine (if striped, the

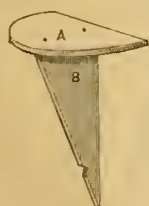


Fig. 3.

stripes to run up and down, it looks very well,) cutting a piece a little wider than the brace piece is long, and long enough to allow for a frill at the top. This piece was hemmed on the top and a thread run $\frac{3}{8}$ of an inch from the edge to draw the frill by, and it was drawn so as just to go round the top piece which was covered with the same material. A thread was also "caught in" at regular intervals along the bottom edge of the cloth so as to draw it into regular plaits, and then this cover was tacked to the top, the gathering thread being covered by a fancy braid $\frac{1}{2}$ inch wide. Then the bracket was nailed up, the bottom gathered and tied to the front of the brace, and a rosette was made and pinned on. Thin stuff requires a lining to prevent the light showing through, for which brown paper will do. As you saw, I made a pair and placed one on each side of the mirror at the toilet stand, so high that lamps set upon them will shed a good light upon the head of a person before the glass. M.

A Very Pretty and Cheap Tidy.

An especial interest in those articles of feminine contrivance called "Tidies," was awakened in us a few days since, by our setting down (in bachelor's quarters, of course,) in a very comfortable rocking chair with a high back and inviting arms. The day was warm and damp, and the chair was a drowsy one, so we were very quiet for some minutes, and when finally aroused, found that we were held fast, Abas-lou like, by the hair of the head. That was a "sticker," and the increased regard for tidies will doubtless stick by us as long as the recollection. One of our lady friends lends us a neat tidy for a pattern, of which we present an engraving. It is made of simple "Swiss" or "Book muslin," which is cut square and hemmed with a narrow hem, and then "braided" with narrow white linen braid in any pretty pattern. That of the one we present is simple, yet pleasing. In forming the points of straight parallel lines; braid of two differ-



ent widths is used, with pretty effect. Finally, the tidy is bordered with a narrow white linen fringe, which may or may not have an open heading. These little affairs wash and "do up" very easily, so the ladies say, and are just as pretty as if they cost five or ten dollars. They may be made of different sizes to suit the backs of chairs or the arms of lounges; and if there are two or more used, it gives a pleasing variety, even if they are made alike, to arrange some with the points down, and others horizontally. It is a useful practice, and quite a test of taste and ingenuity to devise pretty original patterns for the braiding.

All About Mens' Shirts.

[If there is anywhere a woman who has had "super-vision of" a husband's wardrobe for a dozen or more years, without having had any experience similar to that so faithfully recorded below, we would be glad to find her out; she would doubtless be able to contribute to the Household Department of the *Agriculturist* valuable information on other "vexed questions" we think of.—Ed.]

A long time ago I undertook the supervision of a set of shirts, including, of course, their wearer. It was the height of my young ambition that the man should be exactly fitted by his shirts, concerning which he began to make complaints just one moon after I took him in charge. "What is the matter with them?" I meekly inquired. "There isn't a single one that fits me.".... Totally unconscious of the inherent wickedness of the article concerned, I flattered myself that the difficulty would be easily remedied. So I ripped here and basted there, pulled up this shoulder and pulled down that, until I thought I had got it.—Mistaken mortal! it would not fit!—I made another series of experiments with equally futile results. Then I consulted one or two friends, and felt sure I had at last discovered where the shoe—I mean the shirt—pinched. I applied a cure, but the thing wasn't cured. Next I employed a tailor to try his skill. Not one whit better. The man was getting—and I was getting—desperate.

As my *dernier resort*, I summoned a council of

sewing-society women, and we went into a committee of the whole. For hours we expended our united wits on a single shirt, often subjecting the luckless owner to successive trials of the garment. "Don't that now fit your neck exactly?" asked the head of the conspiracy, as for the forty-fifth time we gathered around our victim. "Why, yes," with a charming smile of relief, and twisting his head about experimentally. "Really, I can't suggest any improvement.".... "Oh! be joyful!" exclaimed I, clapping my hands. "Suppose," said one of the wise women, looking at me over her glasses as if some important idea had struck her, "suppose we cut out a new shirt on the improved plan, and if that suits, we'll take a pattern from it.".... "Agreed," cried I, quite jubilant, and ran to a chest for the cotton. So we cut, basted, and tried on—sewed and tried on—starched, ironed, and tried on. "Capital!" affirmed our representative of the lordly sex. "Not a thread amiss. It is the first time in my life that a shirt has exactly fitted me."

As a grateful memorial, I made up six new ones after that identical pattern. We entered on our triumphal epoch. Woe worth the day! Must I own that before forty-eight hours had passed, that "exactly fitted" individual called me aside, and pointed with cruel significance to his neck. "I am very sorry," with the blindest air in the world. "I suppose your mistake came from your great desire not to choke me.".... "Mistake! choke you!" echoed I, convulsively, a little tempted to try the latter. "Don't be troubled. It requires only a slight alteration—a trifle cut out of the binding, that's all. You see its rather large.".... "Why couldn't he have found it out before?"—to myself. —Then aloud with great dignity: "Tell me *precisely* how much to cut out.".... "Well, I should say just about an inch.".... "Just about an inch," muttered I sarcastically, adding, "I believe the mischief is all in your neck, which dilates and contracts on purpose to torment me.".... He smiled kindly on my wrathful tears, and I—well—when the shirt was "rough-dry," I dutifully cut out the inch, basted the binding, and tried it on again.

"That is just what I wanted. It does very nicely now, you see," working his chin up and down. "Yes, I see. I did before.".... "Practice makes perfect, and this time you hit the nail on the head."

When the change was completed, he once more tried on the shirt, and unequivocally assured me "it fitted to a T." So I made the same alteration in the other five, and sat down to take a bit of comfort.

Can you imagine what next happened?—In the course of a fortnight, the man gave me an invitation to ride with him, which I was only too happy to accept. How extremely gracious and agreeable he was! I might have suspected something was coming. From one thing to another he led the conversation, until finally he approached the old hateful topic, (he had on one of his new shirts.)... "I don't mind my vexation," remarked I innocently, "now that you are at last suited." Then, supposing the matter forever at rest, I turned to a pleasanter subject. But coming back to the shirts again, his face assumed such a deprecating look, that I exclaimed in alarm: "Nothing ails them now, I hope.".... "Only a very little thing, and easily altered. In your fear of getting them too large, they are a trifle too small—only a trifle.".... My heart swelled but I uttered not a word.

When we reached home I made him measure off on his forefinger exactly how much he wished inserted. The shirt he had on happened to be the identical one I had first altered. I was fortunate enough to discover in my work-basket the very piece I had cut out. And I was malicious enough to exult at its proving the exact measure of the addition wanted. So I sewed it in again, repeating to myself all the while, "Oh the crochetyness of man!" Will you believe me when I whisper it confidentially, that after all this, for many years, I alternated between cutting out and putting in the self-same piece—the man's neck invariably playing me false. Of late, however, I have dropped the labor of sewing, having discovered that *pinning over* one week, and unpinning the next, answers all the pur-

pose. The victim of this perpetual change silently acquiesces in the inevitable arrangement; and what is better, he has learned to do the thing himself. There is a shirt hanging over a chair in his chamber at this moment. I have had the curiosity to go in and examine it, as I have been writing. I find it is the *pinning over week*.—*Hours at Home*.

Information Given.

[In June, page 223, under "Information Wanted," 23 questions were given. We begin with some of the answers received, asking others to respond. No one writes about questions 1, 2, 4, 8, 13, 14, 17, 19, 22, 23, 26, 27.—Ed.]

Original Contributions to the American Agriculturist.

No. 3.—TO COLOR KID GLOVES.—CLEANING THEM. (a) Put $\frac{1}{2}$ ounce extract of logwood into a 2 oz. phial, and fill up with good brandy. This dye will keep for years if well corked. Put the gloves on the hand, sand with a small swab (a piece of sponge tied to a stick is best,) apply the dye evenly all over them. Then rub one hand with the other, smoothly and firmly, until the gloves are dry—a few minutes only, as the spirit soon evaporates. More logwood gives a nearly black color; less produces a delicate lilac.—*Mrs. S. J. Wood, North Madison, Ind.*....(b) Dissolve India ink in water and apply with a camel's hair brush.—A fine brown may be obtained by rubbing lightly with a strong decoction of tea.—(c) Gloves may be cleaned thus: Wrap a fine cloth around your finger, dip it in new milk, then rub on fine soap, and rub the glove lightly. To all the above operations, the glove must be on the hand.—*E. M. H., Grand Rapids, Michigan.*

No. 5.—TO GET RID OF FLIES.—When the flies settle on the ceiling, as they usually do at night, reduce the light in the room so you can just see them, and take a tumbler, or wider vessel, two-thirds full of warm soap-suds, and place it quickly over each group of the flies, when they will fall into the suds. With a chair or form to stand upon, you can soon clear a whole room, entirely destroying the pests. I have caught a pint of them thus in a very few minutes.—*E. D. Gibson, Ashburnham, Mass.*

No. 6.—CEMENT FOR KNIFE HANDLES.—(a) Lay a piece of alum on the stove, and when melted roll the knife shank in it and immediately thrust it firmly into the handle. It will soon be ready for use.—*S. M. Parker, Wilton, N. H.*....(b) Fine brick dust stirred into melted rosin and used hot will fix knife and fork handles firmly.—*Farmer's Daughter, Richmond, Indiana*....(c) Mix equal parts of wood ashes and common salt, with water enough to make a mortar. Fill the handles with this, and then drive in the shank, and let it dry. I also fixed a stove spud in this way, and it is very tight.—*Joel H. Suttenton, Orleans Co., N. Y.*

No. 7.—PORK BRINE.—(a) The "best pork I ever ate" was the unsolicited compliment paid by many who ate of the pork I put up as follows: For 200 lbs. pork, $\frac{1}{2}$ gallon of sorghum syrup in the bottom of barrel, and a good layer of salt sprinkled into it. Pork packed as usual, well salted with rock salt, and covered with strong brine containing an ounce of saltpetre and sweetened with sorghum.—*L. A. Gildersleeve, Wilmington, Ill.*....(b) To have good sweet pork, first, have the cask sweet and clean; second, the meat must not be frozen; third, use plenty of salt, rock salt is best. Put in a layer of salt, then one of meat packed in as closely as it can be; then alternate layers of salt and meat, until the cask is nearly full. Cover with about 3 inches of strong cold brine, always keeping the meat under brine.—*"N," Shelter Island, N. Y.*

No. 9.—GOOD HOME-MADE INK.—(a) Take $1\frac{1}{2}$ ounces nutgalls, fine ground; 1 oz. gum arabic; 1 oz. copperas (sulphate of iron); 3 gills rain water; $\frac{1}{2}$ gill elder vinegar. Put the nutgalls, water, and vinegar in a quart bottle; let it stand 2 or 3 days, shaking it well several times each day. Strain the mixture, rinse the bottle, return the strained liquid, and add the gum and copperas. Two or three pieces of crushed sugar, the size of a hickory nut, will give the ink a gloss. [Much sugar will make it sticky.—Ed.] This letter is written with ink

made by the above recipe. [It is beautiful.—Ed.] The ink is not jet black at first, but becomes so on exposing the bottle to the sun a few days.—*"N," Shelter Island, N. Y.*....(b) Take 6 ozs. finely powdered nutgalls, 4 ozs. gum arabic, 4 ozs. copperas, and 3 pints rain water. Put all into a bottle and shake often for a week. This letter is written with ink, made by the recipe, 8 years ago, and it is as good as the day it was made.—*Erie Co., N. Y.* [The ink shows very clear, but is not quite so brilliant as (a) which is the same except the vinegar added.—Ed.]....(c) To make a good black ink, that flows well, that will not corrode a steel pen, will not cast a precipitate, or grow gummy; is not injured by freezing: To one gallon of hot rain water add one ounce extract of logwood; $\frac{1}{4}$ ounce gum arabic, and $\frac{1}{8}$ ounce of bichromate of potash, and heat in an iron kettle. The first part of this letter is written with some of the ink thus made, which was frozen half a dozen times last winter. The second part is written with some new made. [Both are good; we see no difference.—Ed.]—*Americus, Perry Centre, N. Y.*

No. 10.—EXTRACTING WHEEL-GREASE FROM UNWASHABLE GARMENTS.—(a) Use kerosene with a sponge or flannel, putting a clean cloth under the greased spot. It is necessary to change sponge and under cloth several times. —*Shelter Island, N. Y.*....(b) Coal oil, similar to the above.—*Farmer's Daughter, Richmond, Ind.*....(c) Rub the grease spot faithfully with a cloth wet with Benzine, if necessary wetting the spot with Benzine also. This is good for other grease and paint, for coat collars, etc.—*S. M. Parker, Wilton, N. H.*....[Benzine is very good for extracting grease of any kind. Wheel grease varies, but the chief difficulty is the iron worn off into it from the wheel boxes, which is troublesome to remove, though the above directions will usually take most of it out.—Ed.]

No. 12.—PRESERVING BACON OR HAM IN SUMMER.—(a) Cut in slices, half fry it, pack in stone jars, cover with the fat fried out, or if that is not enough, add sweet lard. I have tried it for 2 years. A few have failed from not putting it down early enough, and especially from not completely covering every piece remaining after removing a portion for a meal.—*Mrs. S. J. Wood, North Madison, Ind.*....(b) Similar to (a) above.—*E. M. H., Grand Rapids, Mich.*....(c) On a fine dry day in April or May, wrap each piece in paper; then put in bags, 2 or 3 pieces in each, tie them tightly, and hang in an airy place.—*Shelter Island, N. Y.*....(d) Sprinkle the flesh side with black pepper from a box; hang in the smoke house, and flies will not trouble the bacon.—*W. A. Harold, Moline, Ill.*

....(e) Salt and smoke early, before flies appear; coat well with black pepper; pack in tight boxes, filling in around, and 3 or 4 inches on top, with clean, fine ashes.—*Samuel C. Wilson, Fairmount, Ind.*....(f) I have seen hams kept successfully through the summer, in Alabama, by rubbing them thoroughly with ground black pepper, when taken out of the brine, after draining, previous to smoking. The brine was sweetened with brown sugar, and cleansed by boiling and skimming. No flies or bugs ever troubled them. Never ate better hams or pork than the above. When smoked, the hams were hung up without canvas or further treatment.—*L. I. Gildersleeve, Wilmington, Ill.*....(g) Some one (name lost) suggests packing the half salted hams in a heap or box of dry salt....(h) Having hams that appeared hardly salt enough to keep through summer, I cut them in slices and cooked them through thoroughly in a dripping pan in the oven; then packed the pieces in a stone crock, and poured over the fried-out fat, and they kept in excellent order. There is the convenience also, that you always have cooked ham ready for an emergency.—*Mrs. E. Perin, McLean Co., Ill.*

No. 13.—SOAP, AND WASHING FLUID.—*Chemical Soap*.—Pour 2 gallons of boiling water over 3 lbs. sal soda and $1\frac{1}{2}$ lbs. unslaked lime; stir up carefully and let it settle some little time. When clear drain off the lye into a brass or copper kettle, and add 3 lbs. clear grease, and boil $2\frac{1}{2}$ hours, stirring it most of the time. Try some with a little water,

and when done enough fill up the kettle as full as when you commenced boiling, with a weaker lye made by adding another gallon of boiling water to the dregs after turning off the first lye. It should turn thick and soapy, when a tablespoonful of salt is to be stirred into it, and then turn it into moulds—drippers answer nicely. When cold, cut up into bars and lay them in a place to keep when they will dry slowly. It improves with age. When dry it is superior to the "German Chemical soap," I think, and costs only about 4 cents a bar.—*E. M. H., Grand Rapids, Mich.*....WASHING FLUID.—Put into a kettle 1 lb. sal soda, $\frac{1}{2}$ lb. unslaked lime, and pour over them 1 gallon boiling water. Let it settle and pour off into a stone jug.—Soak dirty clothes over night in just enough strong suds to thoroughly wet them, and in the morning put your boiler over $\frac{3}{4}$ full for boiling suds, and heat to boiling point. Wring out your clothes, sorting them, and add to the boiling water 1 teaspoonful fluid and soap enough to make a good suds; throw in the clothes and boil from ten to twenty minutes according to grade, drain well so as to save boiling water; rub out of the sudsing water, and rinse thoroughly.—*E. M. H., Grand Rapids, Mich.*

No. 16.—TO COLOR COTTON AND FLAX CARPET WARP, GREEN.—The following has been often tried with success; will not color woolen: Put in a bag 1 lb. Fustic, with $\frac{1}{2}$ lb. chip logwood, and soak over night in 6 gallons rain water. Then boil one hour, and add 1 ounce of blue vitriol (sulphate of copper), skimming carefully. The clothes or carpet warp are to remain in this a short time, constantly stirred.—*Farmer's Daughter, Richmond, Ind.*

Butter Making.—To "Novice," Montgomery Co., Pa. Most people making butter from one cow have, at sometime, found the same difficulty in getting good butter, and even in getting it all, especially in summer. The mixture of cream gathered in each of six or seven successive days, and of different degrees of sourness, does not work well. The only remedy we can suggest, is to keep the daily cream as cool and sweet as possible to prevent the first gathered from too great souring; then mix it all well and raise the temperature to about 65°, when beginning to churn.—Do not churn too fast. Churning twice or thrice a week will help matters. The trouble will probably cease when cool weather arrives. "Novice" writes so pleasantly, and is so observant withal, that we doubt not she will find many things in her new country life experience, that we shall be glad to hear about.

"Pain Perdu."—Which for an English name we may call *bread secrets*. (The French name means *lost or hidden bread*.) It is an exceedingly delicate dish for tea, and served hot with hot wine sauce with Zante currants, makes a most delicious desert dish. Take half a common loaf of stale bread and cut off all the crust. This crust is put into a slow oven and dried, and then crushed and rolled to fine crumbs with a rolling pin. Cut the bread into slices 1 inch thick, and these into 2-inch square pieces. Take 2 cups of milk, and add to it 2 teaspoonfuls of sugar, and 1 well beaten egg. In this, dip the bread and allowing it to moisten through uniformly, dip it into the crumbs of the crust, then drop into boiling lard and brown like doughnuts; while hot, dust with rolled white sugar and a little ground cinnamon, and eat at once.

Safe from the Second Commandment.—The ladies, and those of the other sex who are accustomed to go into extasies over a "love of a bonnet," are often in danger of breaking that clause of the second of the Ten Commandments, which prohibits "bowing down to anything made in the likeness of anything in the heaven above, in the earth beneath, or in the water under the earth." Those who adore the present latest style of bonnets, may rest assured that they do not thus infringe upon this commandment.

For other Household Items, see "Basket."

BOYS & GIRLS' COLUMNS.

The Sun Seen at the Poles.

To a person standing at the north pole, the sun would appear to sweep horizontally around the sky every twenty-four hours, without any perceptible variation in its distance from the horizon during its circuit. On the 21st of June it is 23 degrees and 38 minutes above the horizon—a little more than one-fourth of the distance to the zenith, the highest point that it ever reaches. From this altitude it slowly descends, its track being represented by a spiral or screw with a very fine thread; and in the course of three months it worms its way down to the horizon, which it reaches on the 23d of September. On this day it slowly sweeps around the sky, with its face half hidden below the icy sea. It still continues to descend, but after it has entirely disappeared it is still so near the horizon that it carries a bright twilight around the heavens in its daily circuit.—As the sun sinks lower and lower, this twilight grows gradually fainter until it fades away. On December 20th the sun is 23 degrees, 38' below the horizon, and this is the midnight of the dark winter of the pole. From this date the sun begins to ascend, and after a time his return is heralded by a faint dawn, which circles slowly around the horizon, completing its circuit every 24 hours. This dawn grows gradually brighter, and on the 20th of March the peaks are glided with the first level rays of the six month's day. The bringer of this long day continues to wind his spiral way upward until he reaches his highest place on the 21st of June, and his annual course is completed. The same appearances are presented at the south pole, only at opposite dates, the 21st of June being midnight and midwinter there, while the north pole is having its summer sunshine.

Two Fights and a Victory.

Bently, formerly a well-known Massachusetts clergyman, one night at a late hour heard a rattling sound near his house. He looked from the window and saw a woman fill her apron from his wood pile, and hastily go away. Shortly after this was repeated, and he returned to his study, sad with the thought of her destitution which led her to the sin. Not long after he was startled by a heavy crash of falling wood, and again looking from the window he saw the poor woman shaking the very dust of the wood from her apron. She swiftly turned away and soon returned heavily laden with wood, which she threw upon the pile in a most determined manner. The doctor's compassion and curiosity were now intensely excited, and leaving the house, he cautiously followed her until he found where she lived. Early the next morning he ordered a wood dealer to send her a half cord of his best wood, sawed and split, but by no means to let her know from whom it came. The teamster happened to overhear the order, and when the poor widow eagerly asked who sent it, he told what he had heard. The conscience-stricken woman hastened immediately to the Doctor's house, and with deep humility and bitterness told him of the temptation to which her poverty had brought her. "Sir," said she, "though my house was dark and cold, though my heart was wrung with anguish at the sight of my poor shivering little ones, I could not keep the wood, my conscience would not let me."—"Say no more, my dear Madam," said the good man, "I saw it all.—I saw you conquer the devil in two fair fights."

Nicknames.

Somebody has collected together the following list of nicknames given to the citizens of the different States, and the by-word titles of several of the different cities: Maine, foxes; New Hampshire, granite boys; Vermont, green mountain boys; Massachusetts, bay state boys; Rhode Island, gunflints; Connecticut, wooden nutmegs; New York, Knickerbockers; New Jersey, blues or clam-catchers; Delaware, muskrats; Pennsylvania, Penhamites or leather heads; Maryland, clam humpers; Virginia, beagles; North Carolina, tuckoes; South Carolina, wensels; Georgia, buzzards; Alabama, lizards; Mississippi, tadpoles; Florida, fly up the creeks; Louisiana, creoles; Texas, beef-heads; Arkansas, tooth-picks; Kentucky, corn-crackers; Ohio, buckeyes; Indiana, hoosiers; Illinois, suckers; Wisconsin, badgers; Michigan, wolverines; Minnesota, gophers; Iowa, hawkeyes; California, gold hunters; Nevada, sage hens; Oregon, hard cases; Nebraska, bug-eaters; Kansas, jayhawkers; Colorado, rovers; Dakota, squatters; Utah, Brighamites; New Mexico, Spanish Indians; Idaho, fortune seekers, or cutthroats; Nova Scotia, blue noses; New Brunswick, fish heads; Canada, canucks. Nicknames of some cities and towns: Quebec, the Gibraltar of America; Montreal, Itla, Cudhes city; Kingston, the Limestone Quarry; Portland, Hill City; Lowell, Spindle city; Boston, Modern Athens, Literary Emporium, City of Notions, and, Hub of the

Universe; Providence, Roger Williams' city; Hartford, Insurance city; New Haven, Elm city; Brooklyn, city of Churches; New York, Commercial Emporium, Gotham, and Metropolis of America; Philadelphia, City of Brotherly Love, city of Penn. and Quaker city; Baltimore, Monumental city; Washington, city of Magnificent Distances, and Federal city; Troy, Ilium; Albany, Sturgeondom; Syracuse, Salt Works city; Schenectady, Durip; Rochester, Aqueduct city; Buffalo, Queen of the Lake; Richmond, Cockade city; Savannah, Forest City of the South; St. Louis, Mound city; New Orleans, Crescent city; Louisville, Falls city; Nashville, Rock city; Cincinnati, Queen of the West, and Porkopolis; Cleveland, Forest city; Detroit, city of the Straits; Indianapolis, Railroad city; Chicago, Prairie or Garden city; Milwaukee, city of Brick; Kenkuk, Gate city; Leavenworth, Cottonwood city; Atlanta, Gate city of the South; San Francisco, Golden Gate; Denver, city of the Plains; Salt Lake City, Mormon city; St. Paul, North Star City.

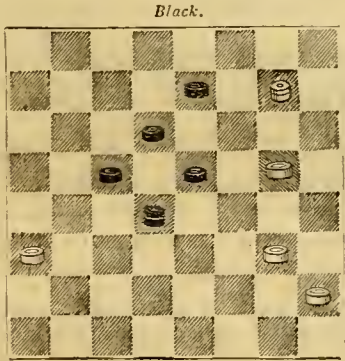
How an Owl was Caught.

Arthur Sexton, Wellington, Ohio, gives an account of his singular capture of a large horned owl. The bird, not content with its usual diet of mice and wild birds, visited the farm-yard to secure the extra daintiness of a young chicken or two. It came to a coop where a hen was covering her brood, and boldly entered. The hen at once retreated from the unwelcome visitor, taking her chickens with her, and in passing out, knocked away the prop, which held up the door or lid of the coop; down it came, making the owl a prisoner, and leaving the hen to finish her night's rest undisturbed. The owl was secured in the morning, and is now suffering captivity as a penalty for his misdeeds. If we had room for him we would be pleased to accept Master Arthur's kind offer to send him to the Agriculturist Office.

Mixing the Pronouns.—We clip the following choice specimen from the New York Independent of June 21: "Did you ever know a person to read how David—even when he was a country boy too—slew the lion and the bear, when they commenced their carnage on the flock that he was watching, without feeling as if they would like to hold the boy in their lap, and give him a loving squeeze and a kiss?" We have no doubt the lion and the bear would have enjoyed giving David a loving squeeze, as the above sentence intimates, perhaps they would have kissed him after their fashion, but as to holding him on their lap, that would have been very awkward if not impossible. Be careful, boys and girls, not to mix the pronouns; it sometimes makes queer work with a sentence.

The Game of Checkers or Draughts.

POSITION NO. 7.—Black to play and win.



GAME NO. 7.—SECOND DOUBLE CORNER OPENING (*)											
Black.				White.				Black.			
1-11	10	15	24	10	19	22-23	30	32	31	20	26
2-15	"	24	23	"	19	23-32	"	23	25	"	19
3-8	"	11	22	"	18	24-20	"	24	8	"	3
4-11	"	16	25	"	22	25-24	"	27	3	"	8
5-10	"	14	22	"	17	26-27	"	31	8	"	11
6-16	"	20	17	"	10	27-2	"	6	19	"	15
7-6	"	24	32	"	28	28-6	"	9	11	"	16
8-4	"	8	28	"	19	29-31	"	27(a)	16	"	19
9-8	"	11	21	"	17	30-14	"	17	22	"	18
10-11	"	16	17	"	14	31-17	"	22	15	"	11
11-7	"	10	14	"	7	32-13	"	17(b)	(c) 18	"	14
12-3	"	10	29	"	25	33-9	"	18	19	"	23
13-10	"	14	26	"	22	34-17	"	21	23	"	32
14-9	"	13	18	"	9	35-18	"	23	11	"	7
15-5	"	14	22	"	18	36-22	"	26	7	"	2
16-1	"	5	15	"	9	37-26	"	31	2	"	7
17-5	"	14	19	"	15	38-31	"	27	7	"	11
18-16	"	19	23	"	16	39-27	"	24	11	"	16
19-12	"	19	15	"	11	40-24	"	19	16	"	20
20-19	"	24	25	"	22	41-19	"	15	20	"	21
21-24	"	23	11	"	8						

(*) Is so named by Anderson, because the first move of the second side is played from the one double corner toward the other. (a) 14 to 18 draws, (b) The losing move. (c) Position No. 6. (See June No., page 229.)

Answers to Problems and Puzzles.

The following are answers to the puzzles, etc., in the July number, page 263: No. 215. *Prize Rebus*.—A band on a sinking ship o'er the waves, clothes over her, or: Abandon a sinking ship before the waves close over her.... No. 216. *Prize Enigma*.—Light-house.... No. 217. *Illustrated Rebus*.—1 long two e w hat ear b (tied on mountain) hill and plane, four eve r (round the) hole world (wide) good will two man kind rain, or: I long to see whate'er beside on mountain hill and plain, forever round the whole world wide, goodwill to mankind reign.... No. 218. *Prize Arithmetical Problem*.—Ans. next month.

The following have sent in correct answers to puzzles: Maggie A. McCabe, Lottie E. Worth, A. W. Morton, Catskill, Peggy, Jennie Cooper, Wm. R. Price, Maggie J. Scott, Lewie Rorebeck, Wm. Kay, Mr. and Mrs. J. W. Scott, L. Stone, C. A. Parsons, II. R. Stanley, Mary E. Brigham, Martha L. Newlin, S. G. Robbins, Frank L. Kilmer, Fred. C. Parmenter, Mary N. Charlton, John Fergus, William Hunter, Lucy A. McCoy, Nelson G. Hull, John T. Binkley, Joseph A. Barnes, J. C. Gape, Nancy Patton, Maria Patton, Henrietta Titus, A. M. Beecher, S. S. Meserve, Silas Bice, Minard R. Bice, John Price, A. J. Myers, Cassia, (please send on the puzzles.) E. Prevost, Harry N. Smith, Daniel Frohman, Henry A. Young, Ida R. Tood, Willis Fair, Wm. Pipkin, C. W. Bailey, C. S. Wise, Willie V. Cloagh, Diantha Roads (no answer came with your rebus), Scott Jenks, Sarah J. Brown, R. Bosworth, H. S. Kratz, Frank Gilderleeve, Eva Littlejohn, S. W. Kleinschmidt, John M. Culver, Charley Ray, Samuel Shawd, H. W. Bateman, Dr. M. D. Leichter, Etta Wilson, Helen M. Bushnell, M. R. Trumbower, George B. Shapley, Walter Lewis.

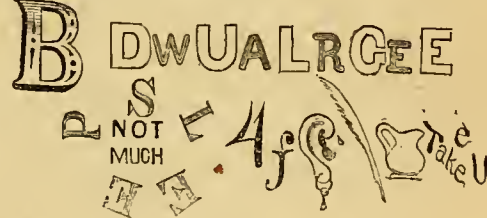
No. 219.—A Scripture Riddle.

Take the name of a Jew who reigned long o'er his land, And who for one sin drove a Queen from command; Who in life, and in death no small honor could claim, Which backward and forward will spell just the same. Then the name of a Jew, only known by the fame Which his son nobly earned, spelling each way the same; And the time of the death of a person (whose name Though not found in the Bible, still knows Bible fame), And which time, back and forward remains just the same. Of a Jew who had sinned, and reformed, take the name, (Which is all that we know of his honor or shame), And which backward and forward is ever the same. Place these four initials together, and frame Of one wise, old, and good, the brief scripture name, Which backward and forward is still just the same.



No. 220. *Illustrated Rebus*.—Dear to all Americans.

No. 221. *Mathematical Problem*.—During the time that the shadow on a sun-dial, which shows true time, moves from 1 o'clock to 5, a clock which is too fast a certain number of hours and minutes strikes a number of strokes equal to that number of hours and minutes; and it is observed that the number of minutes is less by 41 than the square of the number which the clock strikes at the last time of striking. The clock does not strike 12 during the time. How much is it too fast?



No. 222. *Illustrated Rebus*.—Good advice to all.

No. 223. *Farmers' Enigma*.—I am composed of 24 letters. My 13, 7, 10, 15, 11, is raised by farmers. My 5, 3, 12, 24 is eaten by farmers. My 23, 2, 8, 14, 19 is worn by farmers. My 1, 6, 4, 5 is used by farmers. My 9, 15, 21, 16, 20, 18, 4, 14 is received by farmers. My whole is the farmer's friend. What is the word?

No. 224. *Enigma*.—My last is made of my first, my first is kept in my whole. What is the word?

A PARADOX.—When a shoemaker is going to make a boot, the first thing he uses is the last.



"YOU HIT ME."—FROM A DRAWING OF C. E. BETTCHER.

If these two little boys could be properly trained they would make splendid fighters. They look strong, hardy, resolute, and full of pluck. The world needs plenty of just such men as these may become. They are wanted to meet and conquer danger and difficulty in thousands of places; to fight the great waves of the ocean and to make them bear ships safely to port; to level mountains that are in the way; to force the earth to give up its precious ores; to compel barren fields to yield plentiful harvests; to restrain the winds, guide the lightnings, and make a slave of steam; to struggle against error and wrong; to endure persecution; in short, to win triumphs by making the world better, wiser, and happier. For all these great works, just those qualities are needed, which, when wrongly trained, make men brutal bullies. See in the picture how the dog enjoys the prospect of a fight; the boys are putting their combativeness to a wrong use. They may win applause from dogs, and dog-like people, but how much nobler to use their fighting powers in the way God intended, and thus secure the approbation of all the good. *Fight boys!* there are plenty of battles to win, but be sure to fight in the right way.

The Right Road.—"It was a first command and counsel of my earliest youth," said Lord Erskine, "always to do what my conscience told me to be a duty, and to leave the consequence to God. I have always fol-

lowed it, and I have no reason to complain that my obedience to it has been a temporal sacrifice. I have found it, on the contrary, the road to prosperity and wealth, and I shall point out the same path to my children."

Something About the Toad.

The toad is a homely little hunchback, with a rough warty skin, and seems at least deserving of pity. But like many other unfortunates, he has been judged a villain from his looks, and fallen a victim to prejudice. No more harmless animal lives; he can not bite, scratch, or inflict other injury, yet long chapters of his supposed vices and crimes have been written. One writer says: "If he burrows near the root of a tree, every one who cuts a leaf thereof will die, or if he only handles it he will be struck with sudden cramp." The cause of this poison was said to be its liver "which is very vicious, and causeth the whole body to be of an ill temperament." Fortunately, however, toads were said to have two livers, and "although both of them are corrupted, yet one is full of poison, and the other resists poison." An effectual remedy for toad poison was said to be composed of "plantain, black helbore, powdered crabs, the blood of the sea-tortoise mixed with wine, the stalks of dogs' tongues, the vermet of a hare, the quintessence of treacle, and the oil of a scorpion mixed." But even in the

days when this prodigious prescription was invented, some good was acknowledged to exist in the toad. It was said to have a precious jewel in its head, and also to have great power to stop the flow of blood. Says one, "If any one fall and knock his nose against a stone, he can stop the blood, if he hold a dried toad, in his hand; because the horror and fear constrain the blood to run into its proper place, for fear of a beast so contrary to human nature." Such nonsense as this is now scarcely heard, except in some ignorant districts in Europe, where people know little more than what their ignorant parents handed down to them. The toad certainly can not be praised for his beauty, although his eye is as bright as a jewel; but like many other homely creatures he has rare virtues. He does no harm. He may live in the garden among the most tempting berries and flowers, but not one will he pluck; his taste does not run that way. But let a fly, a bug, or a worm show himself within reach, and the dull stupid looking toad instantly appears like another being; he is all animation, and his eye glistens with excitement; his tongue is shot from his mouth like a flash, and the insect disappears down the throat of the happy toad. His tongue is admirably contrived for this use. Its base or root is fastened at the entrance of the mouth, the tip end when at rest pointing down

the animal's throat. It is covered with a sticky slime, to which the insect adheres if hit; and then the victim makes a very rapid journey to the toad's stomach. Gardeners will do well to encourage the visits of these insect killers. Entomologists may also procure many rare specimens by killing the toad and examining the insects which he has swallowed. The next time you find a toad, try his expertness with a few bugs and worms; observing his habits will give much pleasure. Perhaps by becoming well acquainted with him, you may chance to see him change his coat and pants, which he does occasionally—curiously enough, when he takes off his old skin, he rolls it into a ball and swallows it!

An Auctioneer was selling a library at auction. He was not very well read in books, but he scanned the titles, trusted to luck, and went ahead. "Here you have" he said, "Bunyan's Pilgrim's Progress; how much 'm I offered for it? 'Tis a first-rate book, gentlemen, with six superior illustrations; how much do I hear? All about the Pilgrims by John Bunyan! Tells where they come from, an' where they landed, an' what they done arter they landed! Here's a picture of one of 'em going about Plymouth peddlin' with a pack on his back!"

A MAN proves himself fit to go higher, who shows that he is faithful where he is.

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Ripawam.—At the great Strawberry Show, given by the American Institute in this city, the Ripawam took the first prize, over the Agriculturist, and all other varieties, for the largest berry. For particular description of this remarkable strawberry, see my advertisement in July number. Plants \$2 per doz.; \$6 for 50; \$10 per 100; or, \$90 per 1000.

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Golden Queen.—A Seedling resembling Trollope's Victoria, but more productive fruit very large and fine, \$1 per dozen; \$5 per 100.

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Acres, Franklin Tract, at Newfield, Gloucester County, New Jersey, on the Railroad running from Philadelphia to Cape May, 30 miles South of Philadelphia—adjoining the Vineland Tract, and 2 miles North of the Vineland Station—for sale at low prices and on easy terms, in lots to suit purchasers. Circulars, with reports of Solon Robinson, Hon. William Parry, and others, with full information, sent to applicants, free. Address JOHN H. COFFIN & CO., Newfield, Gloucester Co., N. J. Improved Farms also for Sale.

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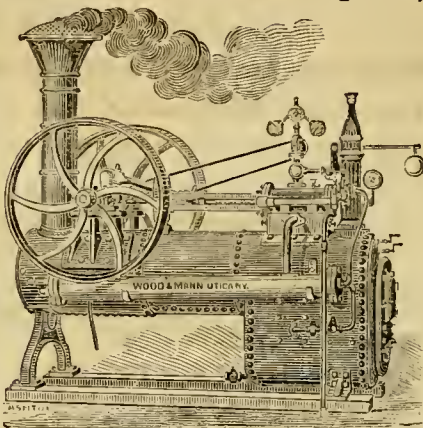
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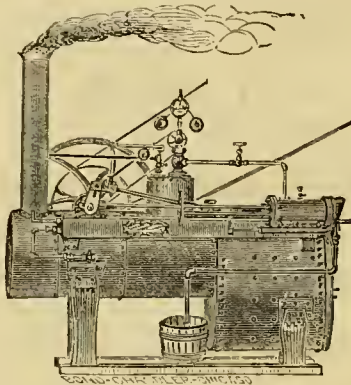
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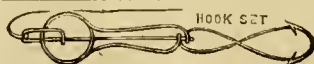
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One Bottle will preserve 125 Pounds of Fruit, or 48 Gallons of Wine or Cider, Price \$1.

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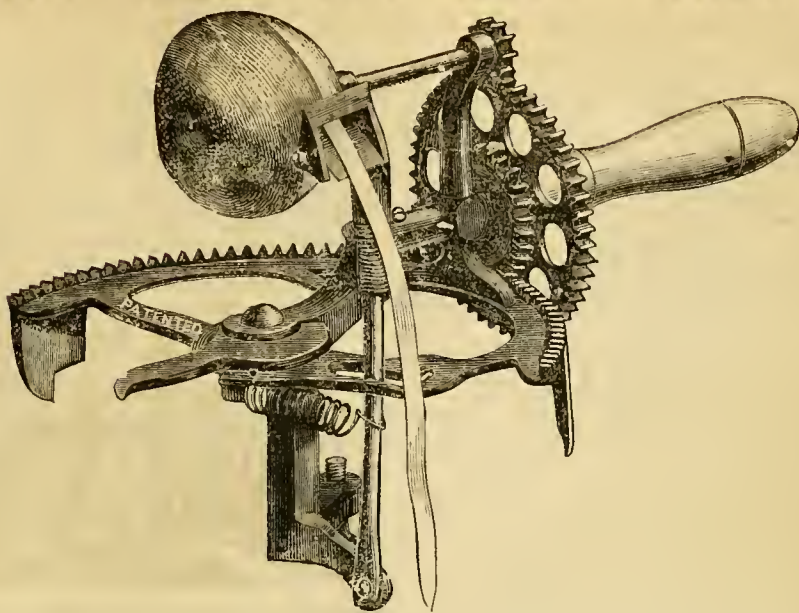
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No. 1 Peruvian Guano,

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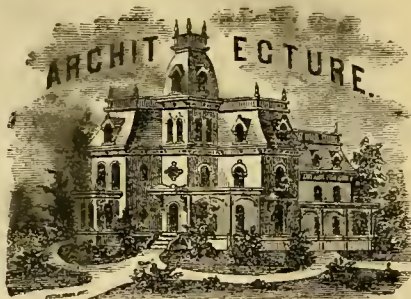
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FREDERICK H. BARTLETT.

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S. L. YETTER.

Neosho, Wis., May 11, 1865.

J. F. HUNT.

Crestline, O., Feb. 8, 1864.

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NEW-YORK, SEPTEMBER, 1866.

NEW SERIES—No. 236.



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GROUP OF HIGHLAND CATTLE. — FROM A PAINTING BY ROSA BONEUR.

It is perhaps not too much to say that Rosa Bonheur stands at the head of the animal painters of the world, especially as a painter of domestic animals. Her tour through the Highlands of Scotland a few years since brought the picturesque cattle of that wild region to her notice, and she has made several striking pictures, one of which we copy, as the best representation we can find of this breed. These West Highland cattle furnish the best beef that is brought to the London market. It is best,

because the fat and lean are so intimately mingled, the best parts being thoroughly marbled, and because the choice cuts are large in proportion to the size of the animal. They are brought from the coarse feed and hard pastures of the mountains and fatten rapidly in the low lands, which is one cause of their excellence. We believe a few of them have been imported to this country, but as yet they have made no mark. Their fitness for the rough country of northern New England, New

York and Canada has never been proved. They are, however, good in the yoke and fair for milk. This spirited picture shows the fine forms of these cattle, their rough and shaggy yet soft coats, and their great vivacity, which comes naturally from their half-wild character. Their carcasses are deep, well ribbed out, round and full; their bones and heads small. It is morning in the highlands; the mists just clearing away; and the sense of frostiness, which pervades the original, is well preserved in our engraving.

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AMERICAN AGRICULTURIST.

NEW-YORK, SEPTEMBER, 1866.

September comes with the promise, and almost the full fruition, of abundant harvests of all kinds of crops. The summer harvests were reported variously from different sections, but on the whole, we believe, the amount of wheat, oats and barley is fully up to the usual average, as well as to just expectations. The hay crop is a little short on an average, and in some sections it will be imperatively necessary for farmers to make the most of the straw and corn fodder, and while we refer to an article on page 321 on corn fodder, let us drop the hint that it is easier and cheaper to buy straw at this season than at any other, especially if the buyer will take it away as fast as it is thrashed. Corn fodder is best bought at husking time, especially if the husking is done at the shocks in the field.

This month and the first part of October is the time for Agricultural Fairs. Every day, "Sunday's excepted," from the 4th of September to the 20th of November is devoted in some place or places to an agricultural fair. It is particularly unfortunate that so many are held upon the same days, so that people are in straight as to which to attend and which to neglect. This might all be obviated by a little correspondence, or if the Secretary of the United States Agricultural Society, which we believe has existence enough to meet and elect officers, would take the matter in hand. We can hardly urge too strongly upon farmers to plan to go themselves at any rate, and take one or more of their sons, to one or two of the best county fairs near their homes, and if possible to go to the State fair also. There is a great deal to learn, the knowledge of which will make a man a better farmer, help put notions of leaving the farm and going to the city to be a merchant out of the boys' heads, giving them an interest in their own profession, and an ambition to raise as fine grain, fruit and vegetables as they see, and to have improved implements and well-bred stock.

We know that there are men who would rather not have their boys get such notions, and think that the old ruts are smooth, easy going, and good enough, but these are men who think in ruts as well as work and run the farm in them. The boys will think, and read and see, and it is harder to keep them in the ruts than the old fogys think.

There is a great deal of work to be done in September, but it is not all of that driving, hurrying kind like much of the summer and spring work.

Hints about Work.

The crops that now require especial attention are:

Buckwheat, which must be cut before frost hurts it, and if put up in neat gaves, the tops being bound to shed rains, will go on filling out, so that, though very few grains may have been fully formed at the time of cutting, there will be few not filled out at the end of a few weeks,—and

Tobacco, which is hopelessly damaged by a slight frost. If tobacco has grown well, the greater part of it will have been cut before the end of the first week in September. See hint about harvesting given last month. The way of hanging most economical of space of any we have ever seen, was described in March, 1864, and is well worth the attention of tobacco growers.

Root Crops may generally at this season receive some attention. Weeds should be pulled when they appear, and the ground kept clean. The soil may often be stirred, especially among carrots, to great advantage, and the best way is to run a sub-soil plow midway between the rows. Turnips need hoeing and thinning, and cabbages constant hoeing.

Potatoes.—The decay of the vines indicates the maturity of the potatoes, and early sorts may be dug and housed at once; but if there is any appearance of rot, leave them in the ground. It makes less work to dig only the sound ones, and the decaying will be chiefly over before the last of October; however, it may pay to dig and market early.

Corn, which promised so very little in July, probably never looked better in August than this year. It is only a little late. Do not top it so as to expose the ears to the frost, certainly not until it is thoroughly glazed. Read an article on page 321 on corn fodder. Go through the best pieces to

Select Seed Corn.—Trust this to no hired man, but do it yourself. Select by feeling ears a little above medium size (no monstrosities), close, firm, well tipped over, tight and full at the butt. Mark these in some way, as with a dab of paint, or by tying a string around the ear. Then in the husking these may be unhusked, or broken off and then husked, leaving the husks attached. Finally select from these the well ripened ones, and those with fewest irregularities, false or short rows of kernels, and braid them up in strings for thorough drying.

Sorghum.—See article on page 316.

Seeding to Grass.—Grass seed may be sowed alone on good soil, on which fine compost has been harrowed in, and, if the ground is not both poor and clayey, will stand the winter well and do much better than if sowed with winter grain. Oats and buckwheat are occasionally sown as a protection to grass. The grain should be sparingly sown. It dies in the winter, but affords the grass a mulch.

Soiling.—Wheat and rye are sown this month for early soiling crops. Next spring, as soon as the rye is fit to be mown, its feeding daily will produce a very great difference in the yield of milk. This is the earliest crop. Wheat follows soon, then very late sowed rye, then spring sowed oats, corn, etc. The rye and wheat will be off the ground in time for summer crops, and as they do not seed, do not exhaust the soil perceptibly. It should be in good heart and tilth, however.

Wheat.—Sow wheat early. The soil should be well worked—not plowed below its natural depth. If sowed upon clover turned under, work in a liberal dressing of fine compost with a Shares' harrow, cultivator, or harrow. Guano, well mixed with fine muck or peat, brings forward rapidly that sown a little late, and causes it to tiller well this fall. By all means drill in the seed, if the ground be of even quality and consistency. If it is hard and clayey, and sandy or light in spots, sow by hand.

Weeds.—Burn every weed that has gone to seed. If fed to hogs, you fill the manure with the seeds.

Stacks of either hay or grain should be watched, and if they settle unevenly or the tops become disarranged by the gales, brace them and retop them. See article on page 277, last vol. (September, 1865.)

Vermin.—The granaries should be early freed from vermin, which will generally collect as soon as grain is stored. Insects must be removed before the grain is put in, when the bins, etc., should be most thoroughly cleansed and whitewashed inside and out. Rats are easily disposed of by using liberally the phosphorous paste. This has also some effect on the mice, but not so much, because, though it is poison and kills them, the mice do not go in communities as rats do, and can not be "stampeded." The paste gives some of the rats a severe colic and they alarm the rest, and so all are cleared out. This paste is very fatal to fowls.

Drainage.—The better the ditcher, the narrower does he make his ditch; broad ditches are only made by green hands. A ditch 3 feet deep should not be more than 14 inches wide, and one 4 feet deep (which is the best for common tile drains) not more than 2 or 3 inches wider. To do this, a set of good ditching tools is needed. Use round tiles if you can get them. Drainage water may often be used upon meadows lying on lower lands for

Irrigation.—The water of brooks, springs, etc., (the more permanent, of course, the better,) may be made the vehicle of untold fertility upon grass lands properly arranged to receive it. The water must never stand, nor flow over the soil, but through it, if benefit would be derived from irrigation. This is a source of wealth, as great as that which lies in the peat swamps, and one quite unheeded.

Not Stock require no especial attention this month other than good care and good feed to prepare them for winter. None should be allowed to run down. Though cows coming in late for winter milking

should not get fat. Beef stock, which are to be finished off for market during the fall and winter, should have an increase of feed.

Hogs for fattening should be penned and fed old corn, ground and cooked. Let the pigs have the run of the orchards. "Taming" hogs by cutting a gash across the snout close to the rooting gristle, so as to make it powerless, is better than putting rings in their noses, and much more easily done.

Sheep.—Give good pasturage with water, salt and shelter from long storms. Fattening sheep should be making flesh fast, and "stores" kept improving.

Manure.—Collect all kinds of waste vegetable matter for increasing the manure heap; put into it no weeds having seeds. The hogs will work over an immense amount of weeds, sods, potato tops, etc., and convert the whole into excellent manure. An old farmer used to say, "he would give more for a cob that a hog had *breathed* on than for a shovelful of yard manure." The bulk and quality of hog manure, or any other kind, are greatly increased by having it all under cover.

Muck and Peat.—Secure as much as possible for use in mingling with manure, or under the stock in the stables this winter. Compost it with lime, if it be not now in a crumbly condition, for it should be dry and fine. Get out as much as you can, and leave it exposed for the action of the frost in winter. This is work for the whole autumn and winter when it can be done.

Orchard and Nursery.

Whoever sends fruit to a distant market, is obliged to pack it in barrels, baskets, or crates. It would pay those who dispose of the products of their orchards near home to take more pains than is usual. In our large towns and villages it is a common thing to see the body of a wagon without springs, filled with apples, pears and peaches, to be peddled out with no more care than potatoes. If those who dispose of only a moderate amount each year will place their fruit in bushel baskets or crates, and put in only good fruit, they will get an increased price that will in a short time more than pay for the packages. Fruit is too great a blessing to be treated in the careless way we often see. Fruit should be picked, especially if to go to a distance, while yet firm, but still fully developed. The old peach basket is now replaced by slatted crates, with two compartments of $\frac{1}{2}$ bushel each.

Dried Fruit.—Commence with the autumn apples and peaches. If the sun is depended upon, take pains to keep bees and flies away. It is better to have some kind of a dry house. One was described in June last. A room kept hot by a stove will answer better than no drying apparatus.

Budding is to be continued with all varieties, in which the stock and bud are in proper condition. See directions given in July. Look to those budded earlier, and if the bud has taken, loosen the bandage. If the first attempt has failed and the bark of the stock will lift, it may be rebudded.

Nameless Fruits.—A fruit without a name is much less valuable than if it had one. In almost every orchard there are more or less varieties of which the name is lost. In such cases, instead of inventing a name, as is too often done, take good specimens to the fair, or to some competent pomologist, and get the correct name.

Labels will be needed to mark rows as they are budded in the nursery, and to label trees as they are sent out or are set this autumn. These can be made on rainy days, or may be ordered of those who make them by machinery.

Planting.—If trees are to be set in autumn, do it early. Draining, manuring and plowing may be done this month. Select the varieties and order trees early. Attend all the fairs and pomological meetings, and learn the local success of varieties.

Seeds.—Gather seeds of trees and shrubs as they ripen. Pits of peaches and plums are best if not allowed to dry. Bury them in earth or sand.

Insects.—Wind-falls should be picked up and given to swine, and thus destroy the grub within

them. Pick off cocoons and all kinds of nests as soon as discovered. Borers, in working their way into the trunk, often show their tracks in the form of saw-dust or borings. When a borer is once in, use a knife and a wire or whale-bone probe and crush him, but it is best to prevent its going in by some of the appliances recommended in May last.

Weeds.—Keep the nursery rows clean by use of the plow and cultivator.

Kitchen Garden.

As soon as a crop of anything is off, gather up the rubbish and take it to the compost heap, or feed it to animals, if suitable. Leave no cleaning up until spring, which may be done in autumn.

Beans.—Limbs are to be shelled and dried for next winter's succotash, and string beans, prepared as for cooking, are to be packed down in kegs or jars with alternate layers of salt and beans.

Cabbages and Cauliflowers.—The only way to get them early is to keep plants over winter in cold frames. Seed of the early sorts may be sown in the open ground this month, to furnish plants for this purpose. Keep the late crop well hoed, and if slugs appear dust with lime.

Corn.—Dry for winter. Save best ears for seed. When early sorts are gathered, remove the stalks.

Cucumbers.—Those for pickles need picking every day, or they will get too large—put them in brine strong enough to float an egg.

Celery.—Earth up, whether growing in trenches or on the surface. In earthing up bring the stalks together with the hand, and keep the earth out of the "heart" of the plant.

Endive.—Hoe growing plants, and when they are a foot across blanch them. Any way that will exclude the light and not stop the growth of the central leaves, will answer. The old way is to tie up the outer leaves over the center; another is to gather and cover with a flower pot. The usual plan in market gardens is to cover it with a mat.

Kale.—Sow hardy variety, called German Greens.

Manure.—The compost heap should increase from the abundance of garden refuse. Act on what has been said in this and previous numbers upon utilizing the contents of privies.

Melons.—Turn to ripen both sides. When fit to pluck, the stem parts with a slight pull. Put the fruit on ice for a few hours, before it is sent to the table.

Onions.—When the tops fall down, harvest them. Let them dry thoroughly before storing and spread them thinly in a cool dry place.

Radish.—Sow the Chinese Rose Colored Winter early this month. It will keep all winter.

Spinach.—Sow in drills 15 inches apart, and thin and weed as soon as the plants are large enough.

Sweet Potatoes.—Some of the larger roots may be carefully taken out, and smaller ones left to grow.

Squashes.—Keep on the lookout for insects. Allow the vines to root at the joints. The Hubbard, when green, is better than any summer squash.

Tomatoes.—Cut away superfluous growth. The larva of the Hawk-moth, a large green "worm," will be abundant this month, and it makes a clean sweep of leaves and fruit. Its presence is betrayed by its droppings. When these are seen, search for the enemy. Preserve plenty of tomatoes in bottles and jars for winter, and make catsup.

Turnips.—Sow the round sorts early in good soil. Give Ruta-bagas frequent hoeing.

Winter Cherry.—The hulls turn yellow when they are ripe; gather and keep in a dry place. They make a most excellent sweet-meat, and are often called strawberry tomato, from their fruity flavor.

Weeds.—Let none seed in out of the way corners.

Fruit Garden.

The suggestions as to preparing for autumn planting, about insects, weeds, etc., under Orchard and Nursery, apply equally to the Fruit Garden.

Blackberries.—The strong shoots for next year's fruiting should be shortened at the height of 4 to 6 feet. This will cause fruit branches to be thrown

out, which may also be stopped if making a very rampant growth. Remove old canes when the fruit is off. Two or three canes are enough to a stool.

Grapes.—As the early varieties ripen, the birds will find it out. We believe nothing short of powder and shot is found effectual in keeping them away. It is a hard remedy, but the choice lies between that and no grapes. The fruit may be sent to a near market in shallow boxes, about six inches deep. Pick with a long stem and handle carefully, so as not to injure the bloom. See p. 323. Enough was said on mildew in previous months.

Pears are to be gathered as soon as ripe and before they mellow. A little experience will determine when to pick. If taken from the tree too early, they will shrivel instead of ripening. Spread upon shelves in the fruit room to ripen.

Raspberries.—Keep the soil free of weeds, and allow only two or three canes to grow to the stool. Remove the old wood, if not already done.

Strawberries.—Early this month is the best time for autumn planting. For culture see last month.

Flower Garden and Lawn.

The cool nights, and less severe heat of the days, will allow many things that were burned in mid-summer to take a new start; the garden should now be brilliant with these and late blooming varieties.

Bulbs.—Hyacinths, Tulips, Crocuses, etc., should be purchased as soon as the dealers offer their stocks, as the best ones are soon disposed of. Set them the last of this or early next month.

Bedding Plants.—As a general thing it is much better to start new plants from cuttings, or layers, than to take up old ones. Yet there are some shrubby ones, as Lantanas, Fuchsias and Heliotropes, that it is desirable to keep. They should be potted before the weather gets too cool.

Chrysanthemums.—Do not allow them to become too crowded; thin out the weaker shoots. They are very fine for house decoration, and last a long time in flower in a cool room. Some for flowering in-doors may be potted this month.

Dahlias.—Cut out all imperfect buds, and remove flowers as soon as they begin to wane. Continue to stake and tie whenever needed, else a strong wind will make short work of the plants.

Lawns.—Pull out coarse weeds, re-seed bare places, and give an occasional mowing.

Perennials and Biennials.—If seed be sown early this month, plants will be had strong enough to winter over and bloom next year—Columbines, Campanulas, Lackspurs, Pentstemons, Phloxes, etc.

Pits.—A flower pit will allow of saving many half hardy plants. A pit 6 feet deep, with the sides boarded up and covered with sash, and shutters, will answer as well as a more expensive structure. It should be well drained and the mice kept out.

Seeds.—Save from the best and earliest flowers, and label as soon as gathered.

Violets.—To have them early in spring, they should be set in a frame early this month. A common plank frame with sash, is set in a sheltered and well drained place, on well manured fine soil. Set out the violets, and keep the sash off until frosts come. Then cover the plants lightly with leaves, and put on the sash and cover with mats on cold nights. They may be started into bloom at any time after midwinter, by removing the leaves and giving them plenty of sun.

Green and Hot-Houses.

If repairs, cleaning and painting have been put off until now, have the houses made ready at once, as they may suddenly need to be occupied. Indeed many of the more tender plants had better go in this month at any rate.

Sow Annuals and plant Cape bulbs, Oxalis, etc., for winter blooming.

Callas.—Divide and repot. It is always well to have an abundance of them; they are so useful in decorating the green-house or dwelling.

Camellias.—If the flower buds are so thick as to crowd, remove a portion. Clean the foliage with a damp sponge, and repot if needed.

Bringing in plants from out of doors will be governed by the locality. Take in the more tender ones first. Clean the pots thoroughly, and renew the surface soil. Remove dead leaves, trim and stake those needing it, and renew defaced labels.

Cold Grapery.—The fruit is now generally ripe, except perhaps some very late varieties, and the atmosphere of the house is to be kept dry. Ventilate freely in fine weather, but close up during a storm. Keep a look out for rats and boys.

Apiary in September.—Weak stocks at this season simply waste honey, and tempt other bees to rob them. While buckwheat is in blossom, there will be little robbing, but as soon as it fails, there will be several hives emptied very quickly, unless watch is kept, and the weak stocks strengthened or protected. Leave no honey where bees can get at it. When bees can protect the entrance of their hive, they will do so, hence make the fly-holes of weak stocks very narrow. When bees are robbing and a stock succumbs, the conquered party turns about and helps the victors remove the spoils. If a stock is found with abundant supplies of honey, yet weak in bees, it may be strengthened by placing it upon the stand of a strong hive when many of the bees are out. If a queen is wanting, a frame of brood comb with fresh eggs may be supplied, in case the drones are not all killed, or a weak colony with its queen may be united with the queenless one. Very few bees furnish the strongest indication of queenlessness. Stocks which have honey, and which it is decided not to winter, should not be broken up until all the brood is hatched and matured. The bees may then be added to other stocks, and the clean empty combs set away for use another year. Surplus honey boxes should be taken off as soon as bees cease to store in them, or they will empty them soon.

Agricultural Fairs for 1866.

NATIONAL AND STATE FAIRS.

American Pomological, St. Louis, Postponed 1 year.
California, Sacramento, Sept. 10 to 16.
Canada West, Toronto, Sept. 24 to 28.
Canada East, Implement Trial, Montreal, about Sept. 1.
Chicago, Chicago, Sept. 24 to 29.
Illinois, Implement Trial, Mattoon, Sept. 4 to 7.
Indiana, Indianapolis, Oct. 1 to 5.
Iowa, Burlington, Sept. 18 to 21.
Iowa Horticultural Soc., Burlington, Sept. 18 to 21.
Kansas, Lawrence, Oct. 2 to 5.
Kansas Ag'l and Mech., Leavenworth, Oct. 9 to 12.
Kentucky, Paris, Oct. 2 to 5.
Louisiana, New Orleans, Nov. 20.
Michigan, Adrian, Sept. 15 to 21.
Michigan National Horse Fair, Kalamazoo, Oct. 2 to 5.
Minnesota, Rochester, Oct. 3 to 5.
Missouri, St. Louis, Oct. 2 to 6.
New England & Vermont, Brattleboro, Sept. 4 to 7.
New Hampshire, Nashua, Sept. 18 to 20.
New York, Saratoga, Sept. 11 to 14.
Ohio, Dayton, Sept. 25 to 28.
Oregon, Salem, Oct. 17 to 20.
Pennsylvania, Easton, Sept. 25 to 27.
Vermont & New England, Brattleboro, Sept. 4 to 7.
Wisconsin, Janesville, Sept. 25 to 28.
Wisconsin Ag'l & Mech'l, Milwaukee, Sept. 11 to 13.

MAINE.

Aroostook Co., Houlton, Sept. 26 to 27.
Franklin Co., Farmington, Oct. 2 to 4.
Waldo Co., Belfast, Oct. 3 to 5.
Oxford Co., South Paris, Oct. 9 to 11.

VERMONT.

Addison Co., Middlebury, Sept. 19 to 21.
Caledonia Co., St. Johnsbury, Sept. 18 to 20.
Chittenden Co., Burlington, Sept. 19 to 21.
Franklin Co., Sheldon, Sept. 12 to 13.
Lamoille Co., Morrisville, Sept. 25 to 26.
Rutland Co., Rutland, Sept. 20.
Wilmington, Wilmington, Sept. 20.
Windham Co., Newfane, Oct. 3 to 4.

MASSACHUSETTS.

Barnstable Co., Barnstable, Oct. 9.
Bristol Co., Taunton, Oct. 2.
Berkshire Co., Pittsfield, Oct. 2.
Essex Co., Haverhill, Sept. 25 to 26.
Franklin Co., Greenfield, Sept. 27 to 28.
Housatonic Co., Great Barrington, Sept. 26.
Hampshire, Franklin & Hampden, Northampton, Oct. 4 to 5.
Hampshire Co., Amherst, Sept. 25.
Hampden Co., Springfield, Oct. 2 to 4.
Hampden East, Palmer, Oct. 9.
Highland, Middlefield, Sept. 13.
Hudson Valley Co., North Adams, Sept. 16.
Middlesex Co., Concord, Sept. 20.
Middlesex South, Framingham, Sept. 18.
Middlesex North, Lowell, Sept. 27 to 29.
Martha's Vineyard, West Tisbury, Oct. 16.
Nantucket Co., Nantucket, Sept. 25.
Norfolk Co., Dedham, Sept. 27.

Plymouth Co., Bridgewater, Sept. 27.
Whately, Whately, Oct. 2.
Worcester Co., Worcester, Sept. 20.
Worcester West, Barre, Sept. 27.
Worcester North, Fitchburg, Sept. 25.
Worcester South, Sturbridge, Oct. 4.
Worcester, Southeast, Milford, Sept. 25.

NEW JERSEY.

Central New Jersey, Trenton, Sept. 25 to 27.
Monmouth Co., Freehold, Sept. 19 to 20.
Morris Co., Morristown, Sept. 11 to 14.
Sussex Co., Newton, Oct. 3 to 4.

CONNECTICUT.

Fairfield Co., Norwalk, Sept. 25 to 28.
Hartford Co., Hartford, Oct. 2 to 5.
Litchfield Co., Litchfield, Sept. 19 to 20.
New London Co., New London, Sept. 24 to 27.
Pequabuck, (Hartford Co.), Bristol, Oct. 10.
Ridgefield, (Fairfield Co.), Ridgefield, Sept. 18 to 20.
Woodstock, (Windham Co.), S. Woodstock, Sept. 25 to 26.

NEW YORK.

Albany Co., Albany, Sept. 25 to 28.
Broome Co., Binghamton, Sept. 18 to 20.
Cattaraugus Co., Olean, Sept. 18 to 20.
Chenango Co., Norwich, Sept. 18 to 20.
"Oxford, Sept. 24 to 26.
Columbia Co., Chatham 4 Corners, Sept. 18 to 21.
Cortland Co., —, Sept. 19 to 20.
Delaware Co., Bloomville, Sept. 25 to 27.
Delhi, (Delaware Co.), Sept. 20 to 21.
Genesee Co., Batavia, Sept. 19 to 20.
"International," Rouses' Point, Sept. 18 to 19.
Jefferson Co., Watertown, Sept. 18 to 20.
Livingston Co., Genesee, Sept. 26 to 27.
Manlius and Pompey, Manlius, Sept. 27 to 28.
Monroe Co., Rochester, Sept. 18 to 20.
Newburgh Bay Hort., Newburgh, Sept. 26 to 28.
Niagara Co., Lockport, Sept. 19 to 21.
Orange Co., Goshen, Sept. 26 to 28.
Orange Co., Horse Fair, Goshen, Sept. 4 to 6.
Oswego Co., Mexico, Sept. 19 to 21.
Otsego Co., Cooperstown, Oct. 2 to 4.
Palmyra, Palmyra, Sept. 27 to 29.
Putnam Co., Carmel, Sept. 12 to 14.
Queens Co., Mineola, Sept. 27 to 28.
Rensselaer Co., Troy, Oct. 2 to 4.
St. Lawrence Co., Canton, Sept. 25 to 27.
Schenectady Valley, Schenectady, Sept. 26 to 27.
Seneca Co., Watertown, Oct. 2 to 4.
Steuben Co., Bath, Sept. 19 to 21.
Susquehanna Valley, Unadilla, Sept. 26 to 28.
Tompkins Co., Trumansburg, Sept. 19 to 21.
Tiooga Co., Owego, Sept. 18 to 20.
Trenton Union, Trenton, Sept. 11 to 13.
Ulster Co., Kingston, Sept. 26 to 28.
Washington Co., Salem, Sept. 19 to 21.
Wayne Co., Palmyra, Sept. 27 to 29.

PENNSYLVANIA.

Adams Co., Bendersville, Sept. 25 to 27.
Allegheny Co., Pittsburgh, Sept. 18 to 21.
Butler Co., Butler, Sept. 26 to 28.
Bucks Co., Newtown, Sept. 25 to 26.
Chester Co., West Chester, Sept. 27 to 29.
Crawford Co., Central, Meadville, Sept. 25 to 28.
Dorchester Co., Doylestown, Oct. 3 to 4.
Glenwood, (Susquehanna Co.), Sept. 12 to 14.
Lehigh Co., Allentown, Sept. 18 to 21.
Northampton Co., Nazareth, Oct. 25.
Susquehanna Co., Montrose, Sept. 19 to 20.
Washington Co., —, Sept. 20 to 21.
Wayne Co., Honesdale, Sept. 19 to 21.

OHIO.

Ashtabula Co., Jefferson, Sept. 5 to 7.
Ashland Co., Ashland, Oct. 2 to 4.
Butler Co., Hamilton, Oct. 2 to 5.
Clark Co., Springfield, Sept. 18 to 21.
Clinton Co., Wilmington, Sept. 19 to 21.
Columbiana Co., New Lisbon, Sept. 25 to 27.
Champaign Co., Urbana, Sept. 26 to 28.
Cuyahoga Co., Bedford, Sept. 12 to 14.
Delaware Co., Delaware, Sept. 19 to 21.
Erie Co., Sandusky, Sept. 18 to 21.
Franklin Co., Columbus, Sept. 11 to 14.
Fulton Co., Ottokre, Sept. 19 to 21.
Gallia Co., Gallipolis, Oct. 9 to 11.
Garrettsville, (Portage Co.), Oct. 3 to 6.
Greene Co., Xenia, Sept. 12 to 15.
Geauga Co., Burton, Sept. 25 to 27.
Geauga (free) Claridon, Sept. 18 to 20.
Harrison Co., Cadiz, Oct. 3 to 5.
Highland Co., Hillsboro, Oct. 3 to 5.
Highland Union, Garrettsville, (Portage Co.), Oct. 3 to 5.
Jamestown Union, (Greene Co.), Aug. 29 to 31.
Logan Co., Bellefontaine, Sept. 13 to 21.
Loraine Co., Elyria, Sept. 11 to 14.
Licking Co., Newark, Oct. 3 to 5.
Madison Township, Madison, Sept. 5 to 7.
Meigs Co., Racine, Sept. 19 to 20.
Montgomery Co., Dayton, Sept. 19 to 21.
Morrow Co., Mt. Gilead, Oct. 2 to 5.
Muskingum Co., Zanesville, Sept. 12 to 14.
Orwell, (Ashtabula Co.), Sept. 20 to 22.
Portage Co., Ravenna, Sept. 19 to 21.
Pickaway Co., Circleville, Sept. 12 to 14.
Plymouth, (Richland Co.), Sept. 25 to 27.
Richfield, (Summit Co.), Sept. 26 to 28.
Seville, (Medina Co.), Sept. 20 to 22.
Summit Co., Akron, Oct. 2 to 5.
Stark Co., Canton, Sept. 25 to 28.
Twinsburg Union, (Summit Co.), Sept. 4 to 6.
Triumph Co., Warren, Sept. 19 to 21.
Warren Co., Lebanon, Sept. 5 to 7.
Wellington Union, (Loraine Co.), Sept. 26 to 28.

ILLINOIS.

Atlanta Union, Atlanta, Sept. 11 to 14.
Boone Co., Belvidere, Sept. 11 to 13.
Bureau Co., Princeton, Sept. 18 to 20.
Cass Co., Virginia, Sept. 4 to 6.
Champaign Co., Urbana, Sept. 11 to 14.
De Kalb Co., De Kalb, Sept. 17 to 20.
Du Page Co., Wheaton, —.

Fulton Co., Lewiston, Oct. 3 to 5.
Greene Co., Carrollton, Oct. 9 to 12.
Grundy Co., Morris, Oct. 2 to 5.
Henry Co., Cambridge, Sept. 11 to 13.
Jackson Co., —, Oct. 18 to 20.
Jefferson Co., Mt. Vernon, Oct. 9 to 12.
Jo Daviess Co., Galena, Oct. 2 to 5.
Kankakee Co., Kankakee, Oct. 3 to 5.
Kane Co., Geneva, Oct. 3 to 6.
Kendall Co., Bristol, —.
Knox Co., Knoxville, Sept. 11 to 14.
La Salle Co., Ottawa, Sept. 18 to 21.
Livingston Co., Pontiac, Sept. 12 to 14.
Logan Co., —, Sept. 18 to 21.
Macon Co., Decatur, Sept. 17 to 20.
Macoupin Co., Carlinville, Sept. 25 to 28.
Marion Co., Salem, —.
Marshall Co., Henry, Sept. 12 to 14.
McHenry Co., Woodstock, Oct. 2 to 4.
McLean Co., Bloomington, Sept. 4 to 13.
Mercer Co., Millersburg, Sept. 11 to 7.
Montgomery Co., High street, Sept. 18 to 21.
Ogle Co., Oregon, —, Sept. 20 to 21.
Peoria Co., Peoria, —, Sept. 20 to 21.
Randolph Co., —, Sept. 26 to 28.
Saline Co., Harrisburg, Oct. 10 to 12.
Stark Co., Toulon, Sept. 5 to 7.
St. Clair Co., Belleville, Sept. 11 to 14.
Vermillion Co., Catlin, Sept. 11 to 14.
Warren Co., Monmouth, Sept. 19 to 21.
Whiteside Co., Sterling, Sept. 13 to 21.
Woodford Co., Metamora, Sept. 12 to 14.

INDIANA.

Hendricks, Danville, Sept. 25 to 29.
Orange Co., Paoli, Sept. 25 to 29.
Posey Co., New Harmony, Sept. 11 to 14.
Wabash Co., Wabash, Sept. 15 to 20.
Wayne Co., Richmond, Sept. 24 to 29.

MICHIGAN.

Central Michigan Ag'l Soc., Lansing, Sept. 12 to 14.
Clinton Co., St. Johns, Sept. 27 to 28.
Jackson Co., Jackson, Sept. 26 to 28.
Sanilac Co., Lexington, Sept. 26 to 27.
Washtenaw Co., Ann Arbor, Oct. 3 to 5.

IOWA.

Cedar Co., Tipton, Sept. 12 to 14.
Central Iowa Dist. Ag'l Soc., Des Moines, Sept. 11 to 13.
Cerro Gordo Co., Mason, Sept. 20 to 21.
Floyd Co., Charles City, Sept. 19 to 20.
Jones Co., Anamosa, Sept. 19 to 21.
Pae Co., Clarinda, Sept. 20 to 22.
Ringgold Co., Ringgold, —.
Scott Co., Davenport, Sept. 3 to 7.
Washington Co., Washington, Sept. 26 to 27.

WISCONSIN.

Brown Co., Green Bay, Sept. 26 to 27.
Columbia Co., Portage, Sept. 19 to 21.
Fond du Lac Co., Fond du Lac, Sept. 18 to 19.
Milwaukee Horse Show, Sept. 11 to 13.
Lafayette Co., Darlington, Sept. 27 to 29.
Polk Co., Osceola, Sept. 18 to 19.
Sauk Co., Baraboo, Oct. 10 to 11.
Walworth Co., Elkhorn, Sept. 12 to 14.
Winnebago Co., Rockford, Sept. 15 to 21.

MISSOURI.

Adrian Co., Mexico, Oct. 9 to 12.
Carondelet Co., Carondelet, Sept. 17 to 18.
N. E. Ag'l and Mech. Soc., Memphis, Sept. 18 to 21.
Pike Co., —, Oct. 16 to 19.
St. Louis Ag'l & Mech'l, St. Louis, Oct. 1 to 6.

KANSAS.

Morris Co., Council Grove.
Anderson Co., Garrett, Sept. 26 to 29.
Osage Co., Burlington, Oct. 1 to 2.

KENTUCKY.

Bourbon Co., Paris, Sept. 3 to 6.
Clark Co., Winchester, Aug. 29 to 31.
Central Kentucky, Danville, Sept. —.
Harrison Co., Cynthiana, Sept. 18 to 21.
Montgomery and Bath, Mt. Sterling, Aug. 22 to 24.
Nelson Co., Bardonia, Sept. 18 to 21.
Shelby Co., Shelbyville, Aug. 28 to 31.
Warren Co., Bowling Green, Sept. 18 to 20.

SUNDRY COUNTY FAIRS.

St. Catharine Hort., C. W., Sept. 19.
Merrimack Co., N. H., Concord, Sept. 25 to 27.
Rockingham Co., N. H., Exeter, Sept. 12 to 13.
Hennepin Co., Minn., Minneapolis, Sept. 26 to 27.
Saint Croix Ag'l Soc., St. Stephens, N. B., Oct. 18.

American Pomological Society.

Postponement.—Just as we are going to press we receive the following circular, signed by the Hon. Marshall P. Wilder, President:—"Whereas, The American Pomological Society was ordered to be convened at St. Louis, Mo., on the fourth day of September next, for the purpose of holding its Eleventh Session; and, Whereas, the existence of Cholera in several of the cities of the United States has become manifest, thereby creating more than usual precaution in regard to visiting places distant from home; Therefore, in consideration of this fact, and also of the fact that there is a small crop of fruit in many parts of our country, the undersigned, by and with the advice of the Executive Committee and other leading Pomologists, does hereby postpone and defer the meeting of said society to the year A. D. 1867, when due notice will be given for its assembling, in the aforesaid city of St. Louis."—This will carry disappointment to a great many, and we think the action is hardly based on sufficient reasons. In New York we too have cholera, and don't mind it at all. It is a disease of the poor and miserable only, and to postpone an important meeting on so slight an excuse, strikes us as something particularly absurd.

Commercial Matters—Market Prices.

The following condensed, comprehensive tables, carefully prepared specially for the *American Agriculturist*, show at a glance the transactions for a month, ending Aug. 11, 1866, and the exports of Breadstuffs from this port thus far, since January 1:

1. TRANSACTIONS AT THE NEW-YORK MARKETS.						
RECEIPTS.						
	Flour.	Wheat.	Corn.	Rye.	Barley.	Oats.
24 days this m'th.	231,500	36,300	3,820,000	115,000	23,000	1,292,000
24 days last m'th.	291,000	538,000	4,050,000	169,000	67,000	1,311,000
SALES.						
	Flour.	Wheat.	Corn.	Rye.	Barley.	Oats.
24 days this month.	181,000	447,000	3,867,000	153,000	18,300	—
24 days last month.	233,000	430,000	3,612,000	199,000	—	—
2. Comparison with same period at this time last year.						
RECEIPTS.						
	Flour.	Wheat.	Corn.	Rye.	Barley.	Oats.
24 days 1866.	232,500	363,000	3,820,000	115,000	23,000	1,292,000
27 days 1865.	318,000	1,397,000	1,835,000	61,000	141,000	1,975,000
SALES.						
	Flour.	Wheat.	Corn.	Rye.	Barley.	Oats.
24 days 1866.	181,000	447,000	3,867,000	153,000	18,300	—
27 days 1865.	314,000	1,953,000	2,149,000	103,000	—	—
3. Exports from New-York, January 1 to Aug. 11:						
	Flour.	Wheat.	Corn.	Rye.	Oats.	
1866.	589,300	167,036	7,548,273	187,189	894,602	
1865.	857,098	1,276,019	879,624	86,094	50,409	

4. Receipts at head of tide water at Albany, to Aug. 7:						
	Flour.	Wheat.	Corn.	Rye.	Barley.	Oats.
	bbls.	bus.	bus.	bus.	bus.	busb.
1866.	114,400	1,490,500	10,435,600	473,000	105,300	4,194,000
1865.	319,400	3,298,400	4,309,200	181,600	168,500	4,668,800
1864.	396,300	3,277,300	3,436,300	64,600	142,100	3,591,300

CURRENT WHOLESALE PRICES.

	July 13.	August 11.
PRICE OF GOLD		
Flour—Super to Extra State	\$6 40 @ 9 90	\$5 65 @ 9 50
Super to Extra Southern	10 10 @ 17 50	9 35 @ 15 00
Extra Western	7 65 @ 14 00	6 75 @ 12 50
Extra Genesee	9 90 @ 14 00	9 60 @ 12 50
Superfine Western	6 40 @ 7 90	5 65 @ 7 25
RYE FLOUR	6 50 @ 7 50	5 25 @ 6 25
CORN MEAL	4 75 @ 5 40	4 50 @ 5 00
WHEAT—All kinds of White.	2 65 @ 3 25	2 25 @ 2 75
All kinds of Red and Amber.	1 50 @ 3 00	1 20 @ 2 85
CORN—Yellow	88 @ 95	90 @ —
Mixed	88 @ 87	80 @ 82
OATS—Western	51 @ 54	43 @ 57
State.	— @ —	60 @ 61
RYE	97 @ 1 28	72 @ 1 05
BARLEY	95 @ 1 20	Nominal.
HAY—Bale of 100 lb.	60 @ 90	75 @ 1 20
Loose.	65 @ 1 00	85 @ 1 25
STRAW, of 100 lb.	60 @ 1 10	75 @ 1 25
COTTON—Middle, of 50 lb.	35 @ 37	34 @ 39
HOPS—Crop of 1866, of 50 lb.	15 @ 65	15 @ 65
FATHERS—Live Geese, of 10 lb.	40 @ 85	20 @ 85
SEED—Clover, of 10 lb.	11 @ 12	11 1/2 @ 12 1/2
Timothy, of bushel.	6 50 @ 7 00	6 75 @ 7 50
Flax, of bushel.	3 15 @ 3 30	3 10 @ 3 50
Sugar—Brown, of 50 lb.	42 @ 13 1/2	43 @ 13 1/2
MOLASSES, Cuba, of gal.	49 @ 65	47 @ 65
COFFEE—Rio, (Gold price) of 50 lb.	14 @ 19	15 @ 20
TOBACCO, Kentucky, &c., of 50 lb.	6 @ 30	6 @ 30
Seed Lent, of 50 lb.	5 @ 43	5 @ 43
WOOL—D. mestic Fleece, of 50 lb.	38 @ 75	35 @ 75
Domestic, pulled, of 50 lb.	28 @ 57	25 @ 55
California, unwashed.	15 @ 40	15 @ 40
TALLOW, of 50 lb.	12 1/2 @ 12 1/2	12 1/2 @ 12 1/2
OIL CASE—of 100	52 50 @ 56 50	52 00 @ 55 00
PORK—Mess, of barrel.	29 50 @ 32 06	31 75 @ 31 87
Prime, of barrel.	26 75 @ 27 00	27 25 @ 27 75
BEEF—Plain mess, of 100 lb.	16 00 @ 21 00	16 00 @ 20 00
LARD, in barrels, of 50 lb.	18 1/2 @ 21	19 @ 21 1/2
BUTTER—Western, of 50 lb.	22 @ 33	20 @ 30
State, of 50 lb.	27 @ 40	30 @ 50
CHEESE	4 @ 21	5 @ 19 1/2
BEANS—of bushel	1 50 @ 2 75	1 50 @ 2 75
PEAS—Canada, of bushel	1 15 @ 1 20	1 20 @ 1 30
EGGS—Fresh, of dozen	23 @ 23	20 @ 24
Poultry—Fowls, of 50 lb.	24 @ 25	22 @ 23
Turkeys, of 50 lb.	24 @ 25	22 @ 23
POTATOES—Merces, of bbl.	4 00 @ —	4 00 @ 5 00
Peach Blows, of barrel.	4 00 @ —	— @ —
POTATOES—New, of barrel.	8 50 @ 11 50	2 25 @ 2 75
APPLES—of barrel.	7 00 @ 10 00	4 00 @ 5 50

Gold has been declining in price, during most of the past month. Within a week it has been as low as 146 1/2, as against 161 1/2 at the date (July 13) of our last review. It opened to-day @ 148 1/2....The demand for the principal kinds of breadstuffs during the month has been less active, and under urgent efforts of holders of both flour and grain to realize, prices rapidly receded. Since Monday last, however, the home and export inquiry has been more animated, especially for low and medium grades of flour, prime spring wheat, and sound corn and oats, and the tendency of the market has been in favor of sellers, influenced in part by the reduced supplies available, and the comparatively moderate receipts....Provisions have been in good request, chiefly on speculative account, but prices have been unsettled, especially for hog products, which have varied from day to day, with the interests of the operators, most of whom represent parties at the West, who are injudiciously borrowing money to use for the purpose of inflating commercial values generally, and this, too, to such an extent, as to seriously retard legitimate trade, always the best and most remunerative reliance of producers....Cotton has been much more freely offered at reduced prices, yet has been less sought after....Wool has been unusually quiet, though prices have steadily favored purchasers. The supply of domestic fleece is increasing. Domestic pulled is scarce....Hay has been less abundant, and has been in active request at advanced prices....Hops, seeds, and tobacco have been dull and heavy.

New York Live Stock Markets.—

The supply during the past four weeks has been very good for this season of lowest demand, as here shown:

WEEK ENDING.	Beeres.	Cows.	Culres.	Sheep.	Swine.
August 7	6,064	65	1,029	20,897	6,744
July 31	5,281	148	1,271	16,119	7,496
July 24	5,080	107	1,702	15,804	8,235
July 17	4,775	125	1,663	19,247	6,976
Total for Month.	21,300	445	5,664	73,071	29,361
Average per Week.	5,300	111	1,416	18,018	7,340
do. do. in 1865.	5,253	118	1,500	16,091	11,033
do. do. in 1864.	5,161	145	1,511	15,315	12,676
do. do. in 1863.	3,150	129	694	9,941	21,670

The weekly average for beef cattle, milch cows, and veal calves, is just about the same as for all of last year, while this is the season of least demand; sheep, including lambs, 2000 higher, and live hogs 3700 less. The generally increased consumption has kept prices well up....**Beef Cattle** were materially higher last week, but this week sell about the same as a month ago, or at prices equivalent to 17 1/2 c. @ 18 c. per lb. dressed weight, for extras; 16 c. @ 17 c. for good to first quality; medium to common, 15 1/2 c. @ 14 1/2 c.; inferior to poorest, 14 c. @ 12 1/2 c....**Milch Cows** are in better demand from milkmen who require more animals during the lessened pasturage of August. Really good milkers sell at \$85 @ \$90, calf included; some extras at \$95 @ \$110; common to good, \$70 @ \$80; inferior to poorest, \$65 @ \$50....**Veal Calves** have been in little demand since the prevalence of cholera. A few extras go at 11 1/2 c. @ 12 c. per lb. live weight; good to first quality, 10 1/2 c. @ 11 c.; medium to poor, 10 c. @ 8 c....**Sheep and Lambs**.—Sheep were up to 7 1/2 c. @ 8 c. for best, two weeks ago, but this week have fallen to 7 c. @ 7 1/2 c., and common to poor at 6 1/2 c. @ 5 1/2 c. Lambs, 10 1/2 c. @ 8 c. for the different grades....**Live Hogs** have been scarce, Western farmers preferring to keep them to use up the large corn crop promised. Prices have risen to 12 c. @ 12 1/2 c. per lb. live weight.

WANTED FOR 1867,

200,000 Subscribers!

Or, Better Still,

One More from each Present Subscriber.

HOW WE PROPOSE TO GET THEM.

A Splendid Paper for All;
Great Premiums for Clubs;
Extras to New Subscribers.

Everybody Read The Following:

The great success of the present year encourages the Publishers to renewed effort for the coming year, and to begin the work in advance. They propose to secure at least **200,000** Subscribers for 1867,—which will be the first Volume of the Second Quarter Century of the *American Agriculturist*.

1st.—The present Volume speaks for itself. Our readers know how much, and how valuable matter has been given so far—how many thousands of Hints, Suggestions, etc. And aside from the reading matter, every Subscriber, at the expense of only \$1.50 or less, receives in this Volume *Engravings* which alone cost about *Eight Thousand Dollars!* Many of these are among the finest Original Engravings issued in the country this year.—Well, the next Volume shall not be any less valuable or less beautiful. Indeed, we expect

to make it even much better, just as we are making this Volume better than the preceding one. So every subscriber for 1867, new or old, may confidently expect a great deal for the little currency it will cost. (The immense circulation divides the expenses among so many, that the Publishers are able to give a large return for a little money.—So also the great circulation gives large and valuable advertising receipts, part of which are added to the subscription money in getting up the paper, and thus the subscribers really get back much more than they pay for.)

2d.—The Publishers will Pay every

Person Well, who will take the little trouble and time required to bring the *Agriculturist* to the notice of those who do not now read it, and obtain their subscriptions. To do this in the simplest manner, without the trouble of correspondence, and to give everybody an equal chance, they will offer a large and valuable General Premium List of good and useful articles, from which each one sending a club of subscribers may select just such articles as he may desire, such as Seeds, Vines, Plants, Trees, Implements, Machines, Books, Melodeons, Pianos, extra plated beautiful Tea Sets, Pitchers, Castors, etc., etc. (This Premium List will be ready early in September, and will be sent free to every one desiring it.) The work of collecting subscribers can begin **Now** to the best advantage, as every new subscriber sent in this month has a special inducement (see below), and every one of the new subscribers received after Sept. 1st, may count in the New Premium List. We want as many new subscribers *this month* as possible, for every one who receives the paper free for the next three months, will be very likely to help increase the clubs by soliciting his friends to begin with the new year. **Now Note**

3d.—What every new Subscriber during September will Receive:

Any new subscriber sending in **this month** the regular subscription price will receive the *Agriculturist* for all of 1867 (volume 26,) and the last three months of this year **FREE**.

N. B.—This offer applies to **all** new subscribers received in September, whether single names, or members of ordinary clubs, premium clubs, or otherwise. Thus: \$5 will pay for *four* subscribers for 15 months (October 1866 to December 1867 inclusive), and so of all other club rates. As fast as new names arrive this month (September,) we will enter them right down in our books from Oct. 1st, 1866, to the end of 1867, or 15 months. Note that this offer is *only* for September.

Sufficient time will be given after September 30 for responses to this offer to come from the Pacific States and Territories, and other distant points.

Will our readers please show this offer to friends and neighbors, and invite all to embrace it?

The Implement Trial at Auburn.

The officers of the N. Y. State Agricultural Society have undertaken to conduct a trial of Mowers and Reapers, which would fairly test these machines in such a way, and in so many different ways, that after their report is before the public, every one giving careful attention to it may be able intelligently to review every step of their progress, and pass a fair judgment upon their conclusions.

The trial commenced upon the 10th of July, with the understanding that the committee would stick to work as long as was necessary. The Society was ready on the day appointed, but the exhibitors were most of them behind hand, causing fully 24 hours delay, and no small annoyance and expense to those who came from a distance. The names of the judges are as follows:

Hon. JOHN STANTON GOULD, *Chairman*, Hudson, N. Y.
Col. B. P. JOHNSON, Albany, N. Y.
SARFORD HOWARD, Esq., Lansing, Michigan.
E. R. POTTER, Esq., Kingston, Rhode Island.
Prof. PIERCE, Harvard University, Cambridge, Mass.
Hon. ELISHA FOOTE, Esq., Washington, D. C.
HENRY WATERMAN, Esq., Hudson, N. Y.
Hon. EZRA CORNELL, Ithaca, N. Y.
Hon. SAMUEL CAMPBELL, New York Mills, N. Y.
Hon. A. B. CONOEN, Haverstraw, N. Y.
T. L. HARRISON, Esq., Morley, N. Y.

They are gentlemen who are so well known and respected, that no one will think of such a thing as charging intentional partiality to any one of them. The competitors are, we think, perfectly satisfied that the committee mean to deal fairly by them. The Dynamometer (the instrument used for testing the draught), employed is a triumph of mechanical ingenuity, and is the invention of Mr. Waterman, a member of the committee who has successfully used a larger one several years in testing the draught of locomotives. The instrument acts independently of jerks, equalizing and measuring their force. It records the distance traveled over, and the power expended, so that after a load, or machine has been moved any distance, it may be seen at a glance how many feet the same outlay of power would have lifted 1000 pounds perpendicularly, if it had been so applied. We hope soon to give our readers a description of this interesting machine, with illustrations.

There were 57 entries of Mowers and Reapers, including several entries from the same parties in each of the different classes, as for instance, the same exhibitor would show his machine as a mower, as a self-raking reaper, as a hand-raking reaper, as a combined mower and reaper, and as a one-horse mower—presenting of course as many different machines.

The writer was present the first days of the trial, but could not remain throughout. The field work commenced on the 11th, and was continued for more than two weeks. The mowers were tried first in a piece of badly lodged clover, each cutting an acre, and starting four at a time. The Kirby was the only 1-wheeled machine we saw, and there was one. The Eureka, of novel construction, which struck us as having some very good points. The wheels are set as wide apart as the length of the 5 or 6 foot cutter bar which is between them, and the horses travel 6 feet or more apart, one close to the grass and the other in the standing grass. The grass, if heavy, is left nearly erect. All the most popular machines were represented, and the work done, both in the field mentioned, and in others, in grass of diverse quality, was preeminently excellent. The dynamometer tests have not been made public.

In the grain fields, so far as cutting went, of course all the machines did well. The great interest centered in the modes of disposing of the cut grain. *Hand-rakers* worked well, why should they not?—Some of the *Self-rakers* did well, but not up to the mark. The *Droppers* merited and obtained considerable attention and favor. These receive the cut grain upon a series of long fingers extending backward at right angles to the finger bar, and when a sufficient quantity has been accumulated for a sheaf, the fingers are dropped and the stubble pressing up between the fingers sweeps the gavel off, while by a simple contrivance the falling grain is caught and held, until the dropper is brought into its place again. This plan has the merit of cheapness and great simplicity. There was also a very interesting machine exhibited before the committee, but not placed in competition, upon which two binders riding, bound the grain as fast as it was cut. It is the invention of C. W. Marsh, made by Stewart & Marsh (Plano, Kendall Co., Ill.). Stewart, an exceedingly rapid and expert binder, rode alone and bound the wheat for a short time as fast as cut, when the machine was driven very slowly. On the whole, the hand-rakers are regarded as a thing of the past, the droppers will probably take their place, and people will not be satisfied with self-rakers which do not deliver to binders upon the machine. The trial was a very tedious one, much more so than was necessary. Some members

of the committee evidently lacked practical sagacity: and the committee needed a good foreman, one who would do no work himself, but simply direct others and make things go with spirit. Still we have no doubt of the great value of the results, which will be quite as great for the manufacturers as for the purchasers. The report is not looked for before the State Fair, and we presume it will hardly be given in full at that time. During the mower and reaper trial, other implements, hay tedders, hay forks, presses, horse-forks, hay loaders, etc., were exhibited, and after the trial they were examined and tested by the committee.



Containing a great variety of items, including many good Hints and Suggestions which we throw into smaller type and condensed form, for want of space elsewhere.

ANNUAL SUBSCRIPTION TERMS (always in advance): \$1.50 each, for less than four copies; Four to nine copies, \$3.25 each; Ten to nineteen copies, \$1.30 each; Twenty copies and upwards, \$1 each. An extra copy to the sender of a Club of Ten or more (if no other premiums are taken). The papers are addressed to each name furnished.

GIVEN AWAY—Three Months'

Subscription for Nothing!—By reference to the preceding page will be seen that the Publishers offer the *Agriculturist* for the last three months of this year free to all new subscribers for 1867 received at any time in September.—We respectfully request all our readers to make this offer extensively known, and to invite their friends and neighbors who are not now subscribers, to embrace this opportunity to become so. They will get the paper 15 months for one year's subscription price. Clubs can now be made up, at club rates for next year, embracing old and new subscribers, and the new subscribers will all get the extra numbers free, provided the new names be so marked.—In making this offer, the publishers have several ends in view: 1st, The extra offer is an inducement to many persons who ought to read a paper of this kind, but who hesitate to subscribe; 2d, Every one who reads this journal for a month or two will doubtless be ready to influence still others to subscribe at the opening of the new volume; 3d, Every name, new or old, received now, can be entered and properly arranged on the mail books while our experienced clerks have leisure, and by so much lessen the pressure of business towards the close of the year, when more than a hundred thousand renewals are to be attended to. This last item will partially pay the expense of the extra numbers. So we solicit the kind offices of our friends in swelling the list of new subscribers this month. The extra numbers free will go far in deciding the question of subscribing with many persons, if some one will inform them of the offer.

GOOD PREMIUMS for all who Desire them.—This Month a good Time to begin.

The publishers are preparing a list of excellent articles to be given to those who make up clubs of subscribers for 1867. The list is delayed to make it as complete and valuable as possible. It will be completed during this month with full descriptions, and be sent free to all desiring it. It will contain many valuable articles one or more of which will be specially desired in every family. Any one can begin at once to make up a list of subscribers, and then choose the premium afterwards when the list is made as large as possible. Old and new names will count in the premium clubs, but the extra offer to new subscribers, noted above, will aid in securing new names this month. The extra numbers are given to new members of premium clubs, the same as to others. **N. B.**—Every list of names designed for a premium club must be so marked when sent in, and it will then be credited to the sender in the premium book. Send the names along as fast as obtained, so that the subscribers may begin to receive their papers. To avoid error, and save keeping wrong accounts, let the exact subscription money accompany each list of names. The best mode of remitting money is by Post-office money orders, or drafts on New York Banks, payable to order of the publishers.

Start the Premium Clubs at the Fair, Elections, etc.

—These annual gatherings afford a good opportunity to those who wish to secure one or more of our good premium articles, to begin the work. Last year many persons collected names enough to secure premiums worth from \$10 to \$60, by a single day's work at the fairs.

Government Land and Land Offices

—We have a good many letters asking where the best Government lands are located. We provisionally could

not express our own preferences without getting a flood of letters assuring us that the lands and prospects in a dozen other sections were equal or superior. In most of the new States, and those recently the seat of war, the people are anxious to have settlers from the old States come among them, and a letter to the Governor or Secretary of State, of the State preferred would receive attention, and reliable information would be given.

Trouble with the Grape Leaf.—A.

F. Giffelt sends us a grape leaf, upon which are many rough protuberances, asking what the trouble is. If he cuts these open, he will find a minute larva within. We have seen this several times, but never where we could watch its development and ascertain what the perfect insect is.

Saratoga.

—This resort of fashionable people and invalids, who crowd its hotels and one another from June to October, seeking health in its saline waters, or amusement in the society they there form and find, this year offers an attraction to the farmers in having secured the State Fair. The fair promises to be of unusual attractiveness, and there are many things to interest and entertain outside the fair grounds, of which we are pleasantly reminded by the "Views of Saratoga," published by J. Nelson & Son, New York, with an historical and descriptive sketch by Wm. L. Stone. These are a dozen colored lithographs, and form not only a pleasant souvenir, but a guide book to Saratoga, which will be of value to visitors.

"The Might of the Republic."

Wm. O. H. Oldroyd, of Columbus, O., a soldier during the whole of the late war, has prepared an interesting sheet. He secured *carte de visites* of 110 of the leading public men of the past half dozen years, including military men, statesmen, divines, etc. Upon these were secured the actual autographs of the individuals themselves, and then the whole were arranged together, and copied in a large photographic picture, on a sheet 20x24 inches. Framed and hung in the parlor it is a neat and valuable ornament, giving us the pictures and autographs of each of the 110 men at a moderate cost—\$3, or \$6 if placed in a neat walnut and gilt frame and glass.

\$1.50 pays for a copy of the *Agriculturist* for all of 1867, and a new subscriber sent this month will receive the paper free the last three months of this year.

\$5 pays for four copies of all of 1867, and each new subscriber will receive the rest of this year free. The same rates for five, six, seven, eight or nine copies.

\$12 pays for ten copies for all of 1867, and each new subscriber will receive the remainder of the year free. The same rates for any number of subscribers up to nineteen. A free copy to the sender of the club.

\$20 pays for twenty copies for all of 1867, and each new subscriber will receive the paper the remainder of this year free. The same rates for all copies over twenty. A free copy to the sender of the club.

Hog Cholera.—I. Plaquet, Ills., F. S. Haskell, Mass., S. B. Peck, Mich., and others.—The following will answer your queries, in regard to a remedy concerning which many things are better known than how to cure it.

Many names have been applied to this disease. It being known in various parts of the world as "Blue Sickness," or "Blue Disease," "Pig Distemper," "Red Soldier," and "Hog Cholera," and veterinarians have theorized much on its nature. It first affects the digestive organs; the blood undergoes changes favorable to transudations, which occur in different parts of the body.

Symptoms.—The first thing that generally directs attention to the disease is the sudden death of one or more pigs. On a closer inspection the animals are noticed to be dull, caring neither for food nor water, creeping beneath the straw or into some dark place; the head is held low, and the ears drooping. Signs of abdominal pain are often well marked, and, as a rule, there is a disposition to lie on the belly. The animals are under some circumstances wild, frantic, or quite unconscious. There is occasionally violent retching or vomiting of food or mucus, and bile. In the early stage, the feces are of normal consistence; urine, pale; later, diarrhoea sets in, excrements becoming dark and fecal. The pulse beats from 100 to 120 per minute, the action of the heart being barely perceptible. A staring look, tendency to press on the abdominal organs, rolling about, inability to stand, etc., are indicative of increasing pain. There is a singular jerking or spasmodic breathing in all cases, complicated by congestion of the lungs. A marked weakness of the hind quarters is observed from the commencement of the attack. The animal staggers, its limbs cross each other, and at last are paralyzed. It can not squeal or grunt, and there is a sublethal hacking cough. Blood settles in the skin more or less over the whole body, discoloring the skin and mucous membranes sometime before death; this gave origin to the name "Blue Disease."

The red-lash or purplish color disappears wherever the skin is pressed; an eruption is apt to appear, and the skin becomes scurfy. Death occurs in from three to six hours.

Post mortem appearances.—The skin black and blue; the capillaries, veins of the skin, and subcutaneous tissue are dark-colored and gorged with blood. A yellow serum is apt to accumulate wherever there is the ramified redness. The serous and mucous membranes are studded with ecchymosis (patches where blood settles), which are most developed in the organs of the chest. The intestine is stopped occasionally with solid material. The liver and spleen are full of blood, and the lungs also may be much congested. The blood is dark, serous, fluid, and coagulates very slowly and imperfectly.

Prevention and Treatment.—Wholesome vegetable diet, a sparing allowance of only well cooked animal food and cleanliness, with clean and dry bedding, are the best preventives. When the disease breaks out, send for a well educated veterinary surgeon or a physician. If one is not to be had, an emetic in the first stage of the disease may be given, followed by a gentle purgative or clyster; well-induced gruel should be the only diet.

Clover.—"P." Laconia, N. H., says his clover has run out, and he does not wish to break up the sward if he can get it in again without. We would try sowing clover seed, then harrow, sow plaster, and roll, or drag it all over with a heavy bush harrow if you have no roller.

Grass for a Grove.—"F. J. C." writes to sow grass seed in a grove of Chestnuts and Black Oaks, 25 to 40 feet apart, and some nearer together. "He can not do better than to break up the old soil and sow Blue grass, or Blue grass and Orchard grass mixed."

English Seeds.—Seed dealers will not fail to notice the advertisement of the house of James Carter, Dunnett & Beale, upon page 333 of this paper. The name of Carter as connected with the seed trade is familiar to all who read English Agricultural and Horticultural papers, and their reference to well-known dealers here shows that they have established a good reputation upon this side of the water. They are alive to their own interest in selecting a medium through which to become widely known to the American seed trade.

Thanks to Cyrus W. Field.—August 14th 3 o'clock P. M. We are now realizing the transactions in London and Paris, of To-day Noon!!!

Extra Size.—This number, like all but two of the previous numbers of this year, has several extra pages. It now looks as if we should be obliged to "keep doing so all the time."

Sundry Humbugs.—The swindlers are having a hard time of it. The *Agriculturist*, and the talk it has raised, meet them in every corner of the land. Then the N. Y. City Post-Office shut down on them, and after July 1st none of the known or supposed fraternity of rascals could get a P. O. Box. This of course compelled the chaps to call in person and prove their identity, or to have an actual place of business to receive letters from the carriers—a fatal thing to the greater portion of them, as they had hitherto dodged detection by having only a nominal place of business, and a P. O. Box. We are glad to learn from the Post-office here, that the letter business of these operators has fallen off to less than a tenth of what it was a few months ago. We have ample proof that in its warnings, and its exposures of these swindlers, the *Agriculturist* has saved to the people the present year, at least five times as much as its entire subscription has cost. We shall try to be faithful in this respect in the future, and we solicit a copy of every circular or scheme that comes out hereafter. Not much need be added about particular cases this month. D. Miller, of the "Depository of the Mechanics' and Manufacturers' United Stock Company" has been operating somewhat. His "\$150," "\$165," "\$300," etc., prizes have been scattered around freely. We have a score or two of them on hand. For the \$5 paid for these he sends, as prizes, some poorly printed "certificates" of a great many shares in the "Sandy River Petroleum Prize Company." What's that, and where is it? We have some of these certificates—one for 390 shares sent to Ross County, O., as the "\$300 prize" drawn by Mr. —; another for \$165 (165 shares in the S. R. P. P. Company) sent to a Massachusetts Legislator, etc. As we said last month, this is a "rig swindle." We have lots of tickets, issued by different operators, for watches "valued at" \$18 to \$750, and have by proxy called on all the parties that could be found (not one-fourth of them are where their circulars and tickets say they are), and not one of the watches was worth the small sum asked for the tickets. The same of other articles of jewelry, etc., etc. The "honey manufacturer" is a humbug; \$5 is asked for a recipe, which we published several years

ago and condemned. Humbug "Mackey & Co.," and M. Morphy & Co. issue precisely the same circulars, except the heading and names, both printed from the same type! The sewing machines offered by tickets, and the "English Time Keepers" are worthless. The Washington "Grand National Concert," as stated last month, was a Simon pure "lottery," operating upon the benevolence of people. Westbrook & Co., of N. Y. City, send three different schemes in one envelope. They say their "Manufactory is not accessible until further Notice." Will they not hurry up that "notice" and let us in to see the grand things. They offer "Photos of 50 voluptuous Female Beauties!" Parkinson & Co., in the "ticket" line of business, feel dreadful bad at being refused a Box in the N. Y. P. O., and issue a "smashing" circular against said Office. Parkinson & Co. must be splendid fellows, and wonderfully rich and generous, too, for in one of their circulars we find 128,000 articles, valued at \$6,800,000, or \$53 each, all offered for \$5 each! or less than one-tenth of their "value." Why! they offer at \$5 each, "500 solid gold hunting watches valued at \$300 to \$750" a piece, and another "500 watches valued at \$250 to \$500" each! We found their magnificent establishment to be a small upper room, and could but wonder where they keep the 3500 watches, the 1000 music boxes, the 1000 silver dining sets, the 1500 silver tea sets complete, the 2000 silver urns and salvers, the 2000 richly framed oil paintings, the 3000 mammoth photographic albums, etc., etc. That little upper room of theirs must be a wonderful place. Wish we could see something beyond that "talking hole" in the partition, through which they do business with callers. We would give the price of several \$5 tickets to have one look at half the things they claim to be distributing; it would be a bigger sight than all Paris affords. We strongly endorse the advice of Parkinson & Co.'s, (*alias*, Hubbard, *alias* Gaughan.) as in their circular they say "we [P. & Co.] beg of you not to make any remittances by mail."

About Pickles.—With pickles for family use there is no difficulty, but many who raise cucumbers on the large scale for profit, there is a doubt as to how they shall dispose of their crops. Many have gone into the raising of cucumbers for pickles, from reports of the large returns of some few cultivators. Those who within our knowledge have made pickle-raising the most profitable are those who, living within easy distance of the great pickle factories, could find a ready sale for their crop. The putting up of pickles and canning tomatoes, and the like, is a regular business, and is prosecuted by those who have the experience and capital, on so large a scale, that it is not advisable for small operators to attempt to compete with them. Growers of cucumbers, tomatoes, and the like, who are near these large establishments, meet with a ready sale for the raw material. There is another class of growers who live within a few days by rail, who find a market for their cucumbers by slightly salting them. These put up their cucumbers in tight barrels, with a half peck of salt, then fill the barrel with water and bung it up. In this weak brine the cucumbers will keep a week or two, but if allowed to remain much longer they will get slimy. This is the way in which growers send the cucumbers to not very far distant factories. To put up cucumbers to last for a long time, instead of four quarts of salt to the barrel, at least a half bushel should be used. A brine of this strength, in tight barrels, will, as we are informed by an old pickle maker, keep them for an indefinite time. For family use, when small picklings are made daily, it is as well to dry salt the cucumbers. They will give out their water to make a brine and will shrivel, but when soaked for putting in vinegar they will acquire their plumpness. Use a plenty of salt, as no more will be dissolved than is needed.

Architecture.—The book of designs, etc., which we noticed in July (p. 245) meets with such general favor from practical men (carpenters, etc.) that we call attention to it again. It is advertised on page 349.

How much Hay will an Ox Eat a Day? that is, what proportion of his own weight; supposing he is in good "store" order from first to last, has a good stable in winter, and is required to do no work?

Another Report on Peas.—"H. W. B." writes from Peekskill, N. Y. "A correspondent in your August *Agriculturist* is indignant over 'Carter's First Crop Pea,' and slaughters Carter, and seedsmen generally. My experience is far happier. I bought of Thorburn, in New York, the same pea, (which is sold also under the name of Sutton's Ringleader.) It came on finely, and on June 14th we gathered the first mess. The vine is early, very productive, and the pea the best early pea that we have yet tried. Another pea tried this year for the first time is 'McLean's Little Gem.' It is very early, a dwarf, growing but about 14 inches high, quite productive, and of a flavor nearly equal to the Champion

of England. It is the only wrinkled dwarf pea that I have ever seen. The peas on which I shall rely for another year, are: For very early, Carter's First Crop; for early, McLean's Little Gem; and for main crop, Champion of England."

Cooking Egg Plants.—"L. M. R.," and others, ask how to cook the egg plant, or rather egg fruit. Slice the fruit half an inch or more thick, peel and place for an hour or so in salt and water; then drain and dip in thin batter, or preferably in egg, and then in pounded cracker and fry brown. They are sometimes fried without batter or egg, but then they soak up fat and become too greasy. The rind is sometimes left on to make the pieces hold together, but when they are covered as above this is not necessary. There may be other ways of cooking this fruit, but the above is the only one we have tried, and is good enough.

The New Potato Bug—The 10-lined Spearman.

Numerous specimens of this fearful pest have been sent us this year from Iowa and Illinois. Last year we had it from west of the Mississippi, and as it seems to be progressing eastward—according to Mr. Walsh in the *Practical Entomologist*—at the rate of over 50 miles a year, we reproduce our engraving of the beetle and its larva, in order that it may be recognised and "stamped out" on its first appearance in any locality. The insect is known to entomologists



Fig. 1.

as *Doryphora decemlineata*, and is represented in its perfect state, fig. 1, of twice the natural size. It is yellow, with 10 black stripes. It lays its eggs on the leaves of the potato; they are yellow, placed endwise in clusters, and hatch in about six days.

The young larva is nearly black, but when full grown, fig. 2, (enlarged,) is orange colored with black markings. In seventeen days it goes into the earth, where it takes on the pupa state, and in thirteen days comes forth as a perfect insect. These dates are from a very interesting series of observations communicated to the *Practical Entomologist* by Henry Shinner, M. D., of Mount Carroll, Ill. This destructive insect has some natural enemies among insects, but the only practical way thus far known of treating them is to hand-pick, or knock them off into a pan and destroy them. Mr. J. Malony, Jr., Dubuque Co., Iowa, sent us a particularly fine lot which came alive, and we have taken good care that they shall not increase here, except in print.—Since the above was in type, we notice a report that this destructive insect has appeared in Maine. If this is true, it is greatly to be regretted, and we trust that it will prove that some other insect has been mistaken for it.



Fig. 2.

A Mine in the Muck Swamps.—It is hard to make people believe that in those dark, black, alder-growing, mosquito-hatching, ague-breeding, snakey, musk-ratty nuisances of peat bogs, and muck-swamps, which have been eye-sores and abominations, they are to find their Eldorado—their gold mines—and Anthracite mines. The material which shall warm them in winter, and cheer them in summer, which shall carpet the landscape with green and gold, make smiling harvests and heavy purses. Notice the advertisement of Prof. Johnson's new work on "*Peat and Its Uses*," on p. 339.

S. S. Question Books.—The series, entitled "*Lessons for every Sunday in the Year*" embrace four numbers, each containing 52 lessons, viz: **No. 1**, The period from the Birth of Christ to the End of Acts; **No. 2**, The rest of the New Testament; **No. 3**, From Adam to Elijah; **No. 4**, From Elijah to Christ. The plan in each book is: the selection of lessons to be learned of about 7 verses each, and connecting them with a history, so that while the lessons are landmarks in order of time, the connecting history gives the pupil a clear idea of the events of each period in the order of occurrence. The questions and answers, direct or by references, aid both teachers and scholars to thought, and are especially valuable to the great mass of teachers who are not supplied with abundant commentaries and reference books. These books seem to have met a decided want among Sabbath School people, as between three and four hundred thousand of them have been called for, we believe, almost equally from all denominations of Christians. Editions are issued by several publishers, one of which is supplied at the *Agriculturist* Office. Price 15 cents each, \$1.44 per dozen, or \$12 per 100 copies, for any of the numbers. If sent by mail 4 cents each must be added for prepaid postage, or 3 cents each in packages of ten or more. Four sample copies (Nos. 1, 2, 3, and 4) will be sent post-paid to any address for 65 cents.

Chimneys in Hay Stacks.—It is a common practice in England, where it is frequently difficult to get hay well cured, to make a chimney in the hay stack. This is done by filling a large four bushel sack with cut straw and placing it upright in the middle of the stack, and stow the hay around it. As the stack rises, pull up the sack and proceed as before, until it is finished, and you have a chimney that will carry off the heat, gases, moisture, etc. A butter firkin with a handle to it or a rope answers the purpose. When hay is stacked in a barn, especially a tight boarded one, this chimney is of still more importance, and care should also be taken to have rails underneath, so arranged that air can circulate under the hay and get into the chimney.

Seventh Volume of the American Short-horn Herd Book, which has been for some time promised, is now on our table. It contains the pedigrees of 1086 bulls, and 2400 cows, owned by about 400 breeders. This is the 7th of a series of volumes, edited and published by Hon. L. F. Allen, of Buffalo, which are of inestimable value to Short-horn breeders. We can not better express our own appreciation of this work than by quoting and endorsing the following from the preface: "No one need suppose that he can become a successful breeder, and command sales and prices, unless he be familiar with all the blood, and strains, and crosses of Anglo-American Short-horns. They must be his study. Without this knowledge he goes gropingly to work. Some breeders may suppose that in possessing the volume containing the pedigrees of their own stock, their herd book necessities are supplied. Not so. The best, and most successful breeders, whose herds are most sought by intelligent purchasers, are those who possess and study the entire series of the work."

The Use of Scrub or Grade Bulls.

—This practice can not be too severely deprecated. There are plenty of thorough-bred bulls, Ayrshires and Alderneys especially, probably also Devons, which are for sale at very low prices; calves for \$50 to \$75—yearlings, \$100 to \$200. Quite often, bulls of name and fame, 3 years old or so, which have been used as long as their owners desire upon their own herds, and which are still as good as ever, may be bought very cheap. Certainly no farmer who raises his heifer calves should ever use a scrub or grade bull, and those who raise veal should use good blood Short-horns or Ayrshires.

Preventive of the Pleuro-pneumonia.

—In the 2d Report of the Royal Commissioners on the Rinderpest, "Col. the Hon." Wellington Patrick Chetwyne Talbot and his advisor, who is bailiff of Lord Granville, state in their testimony that as a preventive of the diseases to which close kept cows are subject (Pleuro-pneumonia, etc.), the following articles are given to the cows in Col. Talbot's and Lord Granville's milk stables, viz: 1 oz. nitre every other day to each cow in 1 pint of water, (probably on the feed.) 1 pint of prepared charcoal between two cows on the feed, every morning. This changes the odor of the breath in a few days.

Caked Bag following a Thunder Storm.

—W. L. Benedict, Orange Co., N. Y., communicates to the readers of the *American Agriculturist* the following interesting facts: On the afternoon of the 27th of June it was exceedingly hot and a thunder storm passed over, preceded and accompanied by cold wind and rain. He says: "My cows were in the pasture during the shower, which was very heavy. They were brought up to be milked at 6 o'clock, when I found three of them with their udders very much swollen, badly inflamed, and so sore that it was difficult to milk them. But little milk, and that clotted, could be drawn from the parts affected. I put them in the stable with plenty of dry straw for bedding, and bathed the parts freely with cold water. This seemed to afford much relief, and I repeated the application in about two hours. The next morning the swelling had somewhat subsided. Cold water was again applied freely, as also the succeeding evening, when the cure seemed complete. Some years since I had two cows affected the same way, one of which lost one of her teats, and the other dried up for the season, but then I had not learned from the *Agriculturist* to put my cows immediately in the stable and give them a dry bed."

Woodchuck Medicine.—From your suggestion some months since, to smoke out woodchucks with a rag dipped in melted sulphur, I took the hint of another method. This is my recipe: Blasting powder, 1 lb.; saltpetre, pounded fine, 1 lb.; flowers of sulphur, 2 lbs. (Total cost 85 cents.) Mix well, not breaking the grains of powder. Some rainy day roll a half newspaper on the broom stick, tie up one end of the tube so made: fill 6 or 8 inches with the medicine, insert 10 inches of blasting fuse (price 3 cents a yard), tie snugly, and re-

peat, until you have a rocket for each woodchuck, and one to spare for the boys when they want a Roman candle, and you can't afford one. (Some dark evening lash it firmly to an arrow near the head, and when the fuse has burnt short, let it fly 100 or 150 feet in the air and they will shout.) Put the rest in a raisin box, cover with a shingle, and detail an artillery guard to carry the caisson in the day of battle. Order the regiment under arms, send skirmishers in advance to report on woodchuck holes, let the corps of sappers and miners close the upper opening, if one is higher than the other, and prepare sods and dirt for the lower; light fuse, insert rocket as far as may be, charge shovels and stop the hole when the fire becomes a roar, and see how the smoke will force its way through the ground in various places to show the course of the tunnel. Repeat until the caisson is empty. My woodchucks do not dig out again.

Hen Lice.—Try the following. (Where the idea comes from we do not know, but we have little doubt it will work well; an alum wash kills lice on cattle, why will it not on hen roosts?) Dissolve alum in cold water, or better in hot water, adding enough water to keep it all in solution when cold—about 2 pounds of alum to 12 quarts of water; and apply this thoroughly to every part of the hen house, and perhaps also to the hens. It tans the lice, as we suppose.

Marking Chickens.—It is often a desirable thing with breeders of fancy poultry to be able to mark them so as to readily identify individuals in the flock, in order to keep a register, on the principle of a herd-book, or so as to be able to recognize the age of hens at a glance. In the great poultry shows of England and France, it has been found very difficult to separate birds of the same breed should they by any accident become mixed, and we have seen a French suggestion that fowls should be marked by notches filed upon the toes. This might do for a year or two, but it is very awkward, and we suggest thin copper labels the size of an old three cent piece, wired upon one leg (above the spur in cocks). Such labels may be of several different shapes—square, round, oblong, triangular, oval, and all the chickens of one year receiving their labels at six months old might be adorned with those of one shape, while those of another year receive another shaped label, and so on.

Curing and Packing Hams.—F. Kessler, of Great Salt Lake City, Utah, writes his method of curing and packing hams as follows, and though we do not like his pickle very well, the way of packing is new to us and may be very good: "I pack my joint meat in barrels as close as I can, make my brine strong as possible with boiling water, letting stand until cold, and then for every 100 lbs. of meat add one teaspoonful of saltpetre to the brine, stirring all well together. Cover the meat well over with the brine. If the weather is very cold and the hams large (say 40 lbs. weight), they should remain 6 weeks; if the weather is mild, or the meat kept in a warm place, 4 weeks will be sufficient. Rub the bony parts well with a strong decoction of red pepper. Hang up the meat for smoking, the hocks down; this prevents drippage; smoke to taste with green hickory or sugar maple. The smoke house should be roomy. When sufficiently smoked, I pack in boxes or barrels in clean new wood ashes, where the hams will remain in perfect safety until needed for use. I have kept my hams and shoulders in this way for years past with entire satisfaction; no vermin of any kind will trouble them in the least. I have never known the first piece of meat treated as above to become rusty or old tasted, but it retains its freshness until used up."

Pickling Beef and Tongues.

—**Burlington Recipe.**—Rub slightly with fine salt and let them lie 24 hours. Then cover with the following cold pickle: For 100 lbs. meat, 6 gallons of soft water, 6 lbs. fine salt, 1½ ounces saleratus, 3 ounces saltpetre, and 1½ lbs. of sugar. Beef for drying to be left in this brine nine days; Tongues three weeks.—*City Subscriber.*

How to Train a Shepherd Dog.

Will somebody answer "One who wants to know?"

Dogs for Sale.—The picture in a recent number brings numerous inquiries about Black and Tan and Bull Terriers. There are people in all the cities who make a business of buying and selling, or breeding dogs. They would be able to sell a good many of such as would be servicable ratters, etc., if they would advertise. Good shepherd dogs are frequently inquired for.

The Sliding Balance Gate not Patented.

—J. S. Rogers, of Marengo, Ill., answers one question in the June number about the gate as follows: "There is no patent on the gate that I know of, but Mr. Joel Lee, of Galesburg in this State, has made an im-

provement on it, for which he has obtained a patent. It consists of an iron roller working on a swivel, which is placed on a cross-piece under the second board from the top. The gate rolls back until it balances, and is then easily swung around. His agent has been through this section, selling rights to use the rolls, for \$3 to \$5, according to size of the farm, and leaves a supply of the cast rollers at some hardware store, where they are retailed at 25 cents, the buyer being required to show his papers. Almost every farmer buys a right, for the gate is cheaper, easier made and every way better than a 'pair of bars.'"—See description of gate on page 219.

Where to Locate?—Numerous letters come to us, asking advice where to locate for farming, fruit or market gardening, etc. We are obliged to decline answering such applications for obvious reasons, one of which is that they come mainly from those who should first ascertain whether they should locate at all. Gardening of any kind is only successful when the individual has skill, perseverance and industry. One with a stock of these may locate anywhere near a market and do well, while one without them, no matter how favorably he may be settled, will soon fail. We try to give general hints from time to time; but to give judicious individual advice, we should need to know so many things about the querist's circumstances, experience, natural tact, capital, family, etc. (without knowing all of which we might advise wrongly), that many hours or days of correspondence, and thought on the subject would be required. No one could decide such a question for himself even, without much meditation and inquiry. This statement of the case will explain why we do not answer many letters. Our time can not of course be devoted to individual cases, or we should have none for the public, or for ourselves.

Look Out for the Pronouns.

—A careless use of pronouns often spoils sense. We try to keep them straight, but sometimes fail, and it is worth while to make a mistake now and then if we can get taken up so sharply and pleasantly withal, as we are by J. A. Delano, Macompin Co., Ill., who writes: "I have read the *Am. Agriculturist* with satisfaction and profit for several years, and generally find its teachings 'stand to reason.' Now I am in a quandary, the thermometer indicating 95° in the shade. On page 279 of August number of *Agriculturist* I read the Doctor's treatment of his pinguitudinous porker. 'He gives it corn meal and sour milk, and stirs it with a red hot iron.' Cannot some less ardent persuasive to obesity be substituted during the present 'heated term?' Is it not possible to induce sufficient agitation by those less objectionable (in extreme hot weather) appliances, the 'sharp stick,' or the 'long pole?' How often does the Dr. 'stir' his adipose pet? Might not chloroform or other anæsthetic be employed during the process perturbative? Does not the Dr. render himself liable to an action on a charge of 'cruelty to animals?'"

Tile Drains vs. "Timber Drains."

"J. R." of Marion Co., Ind., asks: "How do earthen tiles do for draining land?—Do the drains last many years? With us many drains laid with timber are failing after about 8 or 10 years use—the wood rots."—It is such a settled thing in our own minds, that there is no material so good for drains as well baked earthen tiles, that perhaps we have not dwelt upon it enough of late. Properly laid in any soil, except in quick sands, or on other unstable bottoms, well baked tiles will last indefinitely long. Nobody has ever known such a drain to fail from the giving out of the tiles. A drain may fill up, or the earth wash and some tiles drop out of place, but placed below the influence of frost, the tiles suffer no perceptible change, except from the wear of the water. Soft tiles will sometimes be crushed by the pressure of the soil above, or crumble by the action of frost, or perhaps by some other influences, and occasionally one soft tile in a line of hard ones gives out and makes trouble.

Japanese Striped Maize.

—In the notice of this new ornamental leaved plant given last March, we were rather cautious in our praise, as we feared that it might forget the "kink," and fail to reproduce its peculiarities from seed, outside of Japan. We have seen plants this year raised from seed grown by Mr. Hogg, and sent out through the enterprise of B. K. Bliss, the well known seedsman, of Springfield, Mass. These plants are as beautifully striped as those we saw last year from Japanese seed, and we see no reason why the peculiarity should not be permanent. The plant has met with great favor in Europe, the horticulturists both in England and on the Continent selling specimens in pots. Moreover, at the recent International Horticultural Exhibition, it received a prize, and has had honorable mention at other European shows. We are glad to be able to give so good an account of a novelty that we were the first to illustrate and bring prominently into notice.

Poudrette from New York to Ohio.

—“A. C.,” four years a soldier, saved his money and bought a farm 22 miles from a R. R. station in Ohio. He licks manure, and asks if it will pay to get poudrette from New York to make corn. No, indeed! It will not pay to cart poudrette as far as you say, if you could have it for nothing. Guano, bone-dust, a good superphosphate, or even ground plaster are of sufficient value to haul so far. If your carts come back from the station empty, it might pay to bring a light load of poudrette, but not if you could get either of the other manures mentioned; that is, if plaster (or gypsum) has a good effect on your soil. Make your own poudrette. See article on p. 319.

Charcoal for Manure.—James Ferguson has at command a large lot of charcoal dust, which he would like to apply to his land, if advisable. Charcoal does not act largely as a fertilizer. Its chief value is as an absorbent, and it may be used in the stables if it be frequently removed and mixed in a muck or earthy compost. Charcoal first absorbs and then decomposes organic gases. When spread on the land it will produce an immediate beneficial effect. There is always more or less ashes in such dust, which would act beneficially.

Fertilizer for Wheat.—“W. W.,” of Southern Indiana, has his choice between poudrette, Peruvian guano, and flour of unburnt bones, for his wheat land, which is of clayey soil. Poudrette for field crops we do not believe in, except home-made poudrette. Peruvian guano, if pure, is very good, especially if properly mashed and mixed with 3 or 4 times its weight of dry fine muck or peat. This compost may be much improved by adding twice as much bone dust, and as much ground plaster (gypsum) as guano—say 150 lbs. guano, 150 lbs. gypsum, 300 lbs. bones. This mixture may be sowed on and harrowed in, or mixed with as much fine muck as you please, and applied evenly.

Animal Carcasses.—Cover up with loamy soil, or muck, work them over a few months after the temperature has become such as will allow fermentation, and mingle again more soil or muck, using as much plaster as you please.

Woolen Waste.—“F. O. W.,” of Black Stone, Mass., can have all the “picker waste” he wants from a woolen mill. It is oily and can not be wet, it is dry and might be used as bedding for horses, but he has tried it and “it spoils the manure” (!) “Left in a pile through the summer, it heats so that one can not hold his hand in it.” We advise F. O. W. and anybody else who is troubled with *too strong* manure to treat it exactly as they would *too strong* tea or coffee—namely, *dilute it* to suit his taste. You add water to strong tea; add soil or swamp muck, or straw to the waste, and make it just the strength you want, first heaping it until it begins to heat.

The Fence Nuisance.—The Legislature of New York overhauled and amended extensively the fence law of the State. The more laws and amendments we have, the worse off we are and the farther from equal justice, until “the People of the State of New York, represented in Senate and Assembly, do enact” that all owners of cattle of all kinds shall be responsible for them, and all the damage they do; and in case they do trespass, wandering from the high way or from their owner's land, or elsewhere upon the premises of other proprietors, it shall be regarded as a misdemeanor of the owner, for which fines and punishments shall be awarded.

How to get in Timothy Grass.—“C. F. S.,” writes: “I have an 8-acre lot, once seeded with timothy, which has now run out, and grows nothing but a wild grass, having its rough prickly seed growing on the blades and not at the top of a stem. How shall I kill this grass? The meadow is overflowed several times a year, and is nearly flat.” There are 10,000 farmers who have each just about such a piece of ground. It needs draining, and the way to do it is to begin when the land is dry, and dig narrow straight ditches 30 feet apart, and 3 feet deep, usually uniting in a main ditch or two dug so as to get the best fall possible. The ditches should be as nearly level as possible and still have a distinct fall. Small drain tile should be laid in the ditches; and 4-inch tiles would generally be large enough for the main drains. After the draining is done, plow in the spring, raise a crop of corn, and follow with spring grain, seeding to Timothy. We suggest summer crops and spring plowing, supposing that the overflowing would interfere with other practice. This meadow offers an excellent chance to irrigate after the plan suggested in August 1864, page 236.

Pinching Grapes.—C. Thurston, Bradford Co., Pa., objects to our directions to stop bearing canes at 3 or 4 leaves from the last bunch, as “agin

natur,” and suggests that “thorough trimming in the fall, with *judicious pinching off*, is according to my experience the best course.” Now friend T., we should like to ask if thorough trimming is not “agin natur?” As to “judicious pinching,” we directed just that same, on the supposition that the vine had been properly trained at the start. Rambling vines in rich garden soil, will have pretty much their own way, whatever you do with them.

What is it on the Pear Tree?—C. C. Phillips, Cumberland Co., Pa., says: “My dwarf pear trees have almost been stripped of their leaves by a slimy, sticky, snail-like worm. What is it?” We try to anticipate such common troubles as this in our “Hints about work.” Under the head of Fruit Garden, in June, it is said: “The disagreeable slimy slug which appears on pear and other trees is killed by a dusting of air slaked lime.” We would not seem to take our friend to task for not reading each paper from the heading to the last advertisement, but use his query as a sample of many for which we have already provided in our Hints about Work. That portion of the paper is made up with a great deal of care, and though many things must of necessity be repeated from year to year, it is always re-written and many new suggestions from letters, etc., worked in.

Beans for a Name.—“P.,” Franklin, N. Y. Those in the green paper are apparently the White Runner, and the others are Lima.

Grafting “Thorn Apples.”—“G. B. S.” By “Thorn Apples,” we suppose you mean some species of Thorn, of which we have several. The pear will grow when grafted upon the thorn, but the trees thus produced are usually short lived, and inferior to those grafted upon quince.

Flies on Cherry Trees.—“Mrs. L. C.,” writes to know why flies gather on her cherry trees, and she notices that the leaves are covered with what she takes to be their eggs. The supposed eggs are undoubtedly aphides, or plant lice, which are very common on cherry trees. These lice exude a sweetish liquid, or honey dew, which attracts flies and other insects in great numbers. Tobacco water will kill the lice, but its application is not very practicable upon the large scale.

Thanks to Whom they are Due.—A delegation of the American Institute Farmers' Club, visited Hammononton, N. J., in strawberry time, and were splendidly entertained by the people of that enterprising place. For some reason not clear to us, it was supposed that we should be there, and at the festival a fine bouquet upon the table was dedicated “To the Editor of the *Agriculturist*.” We are sorry that we did not get the bouquet, but are glad we didn't go, as we should have been obliged to make a speech, which is the horror of our life. Still, the lady or ladies who were so thoughtful will accept our thanks for the compliment.

Degeneration of Strawberries.—M. Korff, asks if the statement made in the report of the Department of Agriculture for 1863, to the effect that the use of side runners in propagating strawberries causes the varieties to degenerate, has any foundation in fact. We never met any one but the writer of the article alluded to who believed in or practised its teachings. One good healthy runner is as much a representative of the original plant as another, no matter from where it starts, and will perpetuate the variety as perfectly as will a bud taken from any part of a tree. The two cases are perfectly parallel, and the strawberry plant may be regarded as a tree with branches too weak to stand upright.

Derivation of “Weigelia.”—W. Peters, New Haven Co., Conn. The proper word is *Weigela*, and it comes from the name of Weigel, a German botanist of the last century. In Latinizing names of other languages, they follow the usual rules of Latin pronunciation, and in this case the *g* would be soft. The plant is now referred to an older genus, *Diervilla*, which is its proper botanical name, while *Weigela* will serve for its English name.

Propagating the Blackberry.—L. Grafton, Pulaski Co., Ind., was unsuccessful in propagating the Lawton or New Rochelle blackberry. Many who have it in their lands would be glad to know what he did to kill it. We do not know how it is in Indiana, but here the smallest root will make a plant. It is too late for peanuts—sweet potatoes will be noticed in season.

“Golden Currant.”—A. Mitchell, Macoupin Co., Ill., sends us specimens of a currant of a bright yellow color. He considers the fruit as excellent for tarts. It appears to be a variety of the Missouri Currant, and is known but not valued with us.

Angle Worms.—J. H. Luttenton, Orleans Co., N. Y. You will find a brief account of the history of the angle worm, with an engraving of its eggs, in the *American Agriculturist* for January, 1863.

A “Rose” on an Apple Tree.—E. W. Knight gives an account of a “white semi-double rose” found on an apple tree, and asks if we have “previous to this, knowledge of a double rose blossoming on the apple?” No—but we have several times seen very handsome double apple-blossoms, which look remarkably like small double roses. They usually appear after the general blossoming is over.

Thorn Seeds.—“N. W. W.,” Peacedale, R. I., says that the seeds of one of our wild thorns will come up the first year, even after being kept dry all winter. Will he oblige us with a leaf or two, that we may know the species.

Out-door White-wash—A Colored Wash.—Having recently erected 1500 feet of rough picket fence, we adopted the following wash, which seems to stick well, and appears very well. About a peck of lime at a time was put in a tub, and over this was poured two pailfuls of water, in which a large double handful of salt was previously dissolved. As soon as the lime began to boil up well, we added about $\frac{1}{2}$ lb. of coarse grease from the fat-tryers, and stirred it in *thoroughly* while the whole was hot. It was then used on the pickets, rails and posts, stirring it often, and diluting as needed. For the running bottom boards we mixed nearly a barrelful of white-wash, in quantities of a peck at a time, with grease and salt, as above. $\frac{3}{4}$ lbs. of lamp black were then ground or mashed; then thoroughly stirred in 3 quarts of sweet milk and strained into the barrel and well stirred—the stirring being repeated every time a pailful was to be taken out, and that in the pail frequently stirred while using. This applied carefully to the bottom board, gives a fine very dark lead color, that contrasts well with the white. Both the white and colored washes were applied very freely, $1\frac{1}{2}$ barrels of fresh lump lime being used.—The posts and rails were washed *before* nailing on the pickets, and the pickets were also washed on one side, so that there is a coat of lime between the pickets and rails. The whole job is satisfactory, and the fence looks like one planed and painted. We expect the lime will add much to its durability.

Deep vs. Shallow Pans for Milk.—There is a general impression that cream rises more freely when milk is set in shallow pans than in deep ones. It seems, however, that the Orange County butter makers, at least in the factories, use deep pans or pails, and think they get just as much cream and of better quality, as there is less exposure to the atmosphere and consequently less liability to its crusting over. X. A. Willard and others in Herkimer Co. have made some experiments which seem to prove that there is no advantage in putting the cream in shallow pans. If such proves to be the case, it will be a great saving of labor (in scalding, etc.), to use deeper pans, as we shall need fewer of them, and this at the present cost of pans is no slight advantage.—Much must depend upon the cow, the season of the year, that is the temperature, and the length of time the milk will keep sweet and in the best condition for cream to rise. A few years ago the subject was discussed, and we know of numerous experiments which led us to consider it a settled fact that shallow pans gave the most cream, and we have little anticipation that this decision will be reversed.

The Glory and Shame of England.

—Several years ago Mr. C. Edwards Lester wrote a book with the above title. Since the war, during a portion of which he was in Great Britain and upon the Continent, he has re-written it, or rather we may say, put forth another work with the same title, in two volumes. Mr. Lester looks upon England's power and England's weakness as an American may now-a-days be expected to do, making few allowances, and applies to her the measures which she delights to apply to the rest of the world. He has furnished a book of many statistics, and statements in regard to the condition of the agriculture and of the agricultural population of Great Britain; and in his discussions of politics, religion and society, of the condition of Ireland and of India, and of the aristocracy, he furnishes a mass of matter which will be read with great satisfaction by at least some American people in their present frame of mind. Mr. Lester does not forget the love we bear to England as the mother country, and the home of our poets, philosophers and historians, nor the warm brotherly affection we entertain for the working men and the liberal statesmen of England, and the work is one which will exalt the appreciation and love of his own country in the heart of every American. It is in 2 vols., small 8vo., 364 pages each, price in muslin \$4.

Two Tons of Clover per Acre. (or rather what would make that amount after cutting and drying for hay.) plowed in green. Dr. Warder tells us he thinks is fully equal to 10 cords of ordinary barn yard manure. Manure costs the farmers in the vicinity of New York, on an average, delivered on their farms, fully \$6 per cord. To spread and plow it in costs about the same as plowing in the clover. Now the cost of raising these two tons of clover, allowing \$10 per acre for rent of land, cannot exceed \$20, if over \$15 on the average. It would then require the addition of a little bone dust, guano or some salts to make it equal in general quality to barnyard manure, which would add to its cost. The question now is whether it is not cheaper to plow in clover, buckwheat, turnips, or some green crop, than to purchase city stable manure at a cost of \$6 per cord, delivered on the farm? In deciding this matter, it must be recollected that the city manure is exposed more or less to the weather when unloaded on the dock, and its wastage and deterioration are often considerable.

Ashes on Orchards.—F. Ruteliff, of Henry Co., Ind., asks: "Will ashes be good to bring up an old orchard; if so, when and how shall I apply them?" Adding: "There are plenty at a saw-mill $1\frac{1}{2}$ miles from our farm." There is nothing better, as a general rule, for old orchards than a liberal dressing of unleached wood ashes. It would be hard to tell how much it would not pay to apply; a barrel or two to each tree, spread as far as the outmost boughs, plowing 4 to 6 inches deep, will probably rejuvenate the orchard, provided there is any soundness left in the trees. Lime is nearly as good. It should be spread freshly slaked, after plowing, and be harrowed in; or a light dressing, say $\frac{1}{2}$ of the whole, may be first spread and plowed in, and the rest put on the surface after plowing, and then harrowed in. Calculate to put about 3 bushels to each tree, though more would do no harm; make the application in the autumn.

Lime on Wet Land.—"J. W." New London, Ct., has a piece of wet land which lacks only drainage to be excellent meadow. He has drained as deep as he can, but to drain the piece, his neighbor below must deepen his drains also—which he will not do. Mr. W. has legal right to go on and deepen his neighbor's drains, or to lay a tight drain across the piece, and so benefit himself only, but does not want to do it yet. "Will lime help the land?"—We think it will, where the ground can be plowed in time for corn or potatoes, but not much elsewhere. Apply after plowing, and harrow in.

Death to Canada Thistles.—David Newport, of Evergreen (no State), "actuated by the desire to do good and communicate," says: "I would inform the readers of the *Agriculturist* that I have succeeded in destroying two considerable patches of Canada thistles, by the persevering use of small quantities of coal oil applied to each plant."—If Canada thistles are cut in the summer, after they throw up their flower stalks and before they bloom, perhaps also at other times, and a pinch of salt is dropped into the hollow stem, they die. When they are cut frequently with a spud just at or below the surface, they will rapidly disappear. The application of coal oil will kill any weed, or any other plant, it comes in contact with, and may prevent growth of any vegetation on the same spot for a considerable time. So be careful.

White Willow Fences.—The public have heard the growls of the dissatisfied and humbugged people through the press, while those well satisfied with their willow fences, that is, those who obtained the genuine article and took good care of the fences as they grew, we seldom hear from. It is therefore worth while to read such a letter as this now and then. Levi Smith, of Story Co., Iowa, writes to the *American Agriculturist* as follows: "In the June number of the *Agriculturist* you make some inquiries about the white willow. James Smith is the man who first introduced the white willow in Illinois, in 1843. He there tested it successfully. There is a fence on the old farm in Illinois twelve years old, for which the owner refused \$8 a rod for the trimmings some years ago, it was to be cut high enough to leave an everlasting live fence. I have known it to form stems in one season $1\frac{1}{2}$ inches in diameter. Designing men have procured such samples, and with them have canvassed the country and obtained orders, which have often been filled with a spurious article easier to procure. Our farmers have been so shamefully humbugged with worthless trash, that they are of opinion that all willow is alike worthless. I have now six miles of it, three and four years old, and it is a substantial fence, ready to turn and defy any stock. I consider it worth more to-day than the land it encloses. For fuel I grow five times the amount I can consume. Every year I can cut enough poles to fence 2000 acres of land, and still leave me a substantial live fence when they were cut. You may say

to the readers of the *Agriculturist* that the white willow is no humbug, and if any of them will call, I will show them six miles of fence, which will settle the question."

Putting Straw Among Clover in Stacking is an English practice. The straw absorbs the juices from the clover, and arrests all tendency to injurious fermentation. The hay is sweeter, and cattle eat the straw with avidity. If you have a heavy crop of clover, that is a little green, put thin layers of bright straw between the layers of hay, and there will be no danger.

Plow for Deep Work.—"B & B," Adamsville, Ohio, ask, "What is the best plow to break up the ground 14 inches deep, and throw up the subsoil?" There are as many patterns of the "double Michigan," or "sod and deep soil" plows, as of single plows. The plowman must suit himself as to shape and price. We described and figured the operation of these plows on page 145, of the last volume, (1865). The sod and deep soil plow is like any other large strong plow, with a small plow, called the skimmer, attached to the beam. The beam is subject to severe strains and should be strong accordingly. Such a plow will do the work required, burying the sod either in the bottom of the furrows if the slice is thin enough, or folding it like a book and setting it edgewise, while the big plow follows and covers it up.

The Water Carrier Improved.—B. C. Dodge, Washington, D. C., writes to the *Agriculturist* suggesting an improvement upon the Water Carrier, described on page 218, (June). He says: "Instead of the number of posts and the wooden track or rail there used, a good strong telegraph wire may be substituted to great advantage. A strong wire, firmly secured at each end and stretched tight, may be thus used for a distance of from one to two hundred feet, without any intervening posts or supports. If a longer line is required than can be thus used, it may be made of any required length by the addition of an occasional post—care of course being taken to so arrange the arm that supports the wire, as not to form an obstruction to the passage of the pulley, which is easily done. A common iron pulley can be used on the wire. I have seen two such devices in use, one about 100 feet, and the other nearly 200 feet long, at an angle of fully forty degrees, without any support except at the ends, and they worked admirably and had been in use for years. One is in Wisconsin and the other in Minnesota, and both raise water from fine springs situated in deep hollows, summer and winter.

Convenience and Practical Utility of Frame Hives.—On May 31st we swarmed—and arranged ready for work—32 swarms of bees in 5 $\frac{1}{2}$ hours, by simply lifting out the combs, and shaking $\frac{2}{3}$ of the bees together with the queen into a new hive. While under the practice of drumming, it required a whole day to drive even 20 swarms. Bidwell Bros., St. Paul, Minn.

New Peas Again.—"A Lady Gardener" writes: "I am tempted to give you my experience with Carter's First Crop. I sent for a package of them with other seeds last spring, had them planted when the garden was made (which is not, in the north part of Worcester, Mass., usually "very early.") I had peas fit for the table July 4th, leaving a portion of the vines untouched for seed. The vines so left grew about 2 feet high, the peas ripened and were planted again on the same ground, and now, July 23th, I have a second set of vines growing for late ones. Those vines from which I plucked the peas green are some of them still growing, but none more than 3 feet high. We threw out the Dan. O'Rourke years ago as poor in quality, and poor bearers. There's a difference somewhere. I sincerely sympathize with your venerable correspondent in his care for the green peas, but still think that those I bought under the style of Carter's First Crop are a good pea." We have had other letters speaking well of "Carter's First Crop Pea," and doubtless our correspondent, whose letter was published last month, got the wrong sort.

Plants Named.—"New Rochelle": No. 1, *Salisburya adiantifolia*, the Japan Ginkgo, and not rare in cultivation. No. 2, *Periploca Græca*, often called Virginia Silk, but not a native of this country. . . . M. R. Wooley, Ogdensburg, N. Y. No. 1, *Robinia hispida*, Rose Acacia. No. 2, *Cytisus Laburnum*, the Golden Chain, or Laburnum. No. 3, *Spiræa prunifolia*. . . . M. R. Allen, York Co., Me. No. 1, *Oenothera pumila*, Dwarf Evening Primrose. No. 2, *Tiarella cordifolia*, False Mitre-wort. . . . Miss E. Goss, Wellington, O. *Thalictrum dioicum*, Early Meadow-rue. You were puzzled with this because it is dioecious, and for the same reason R. G. Fuller, Kent, Conn., could not make out *Chamaelirium luteum*, the Blazing Star. . . . R. H. McCarty, Mottville, *Spiræa opulifolia*, Nine-bark, a shrub worth cultivating. . . . A. W. Tabbutt, Columbia Falls, Me. No. 1, *Ledum*

latifolium, Labrador Tea No. 2, *Juniperus communis*, Common Juniper. . . . C. W. Benais, Holliston, Mass. The shrub with yellow flowers and bladder ry pod is *Colutea arborescens*, Bladder-senna; the other is *Amorpha fruticosa*, False Indigo. . . . J. J. S., West Point, O. *Dicentra spectabilis*, the Bleeding Heart; the other a *Phacelia*, but not enough of it to determine which. . . . W. S. Van Doren, Kansas. We cannot undertake to tell double roses from dry specimens. . . . "Subscriber," Baskingridge. The Scarlet Lychnis, *Lychnis Chalcedonica*, a very old garden plant. . . . J. Johnson, Camden, N. J. No. 1, *Rhexia Virginica*, Deer-Grass. No. 2, *Polygala sanguinea*. . . . Mrs. O. D. Frost, Neosho Co., Kansas. *Sabbatia angularis*, one of the species of American Centaury; and something of the Mint Family, but no flowers to determine it by.—We have a number of other specimens which will be determined as soon as we have time.

Strawberries in Iowa.—J. Bouland, Winnesbick Co., Iowa, has tried several varieties, and they all failed. He does not say whether they were covered in winter. Plant in spring and when the weather is cold enough to freeze the ground, cover with straw, corn stalks, or leaves. Wilson's Albany is perhaps as safe as any, but it is no harder than the *Agriculturist* and many others.

Fruit in San Francisco.—Mr. T. Hart Hyatt writes, that apricots and green corn appeared in the markets of San Francisco on May 20th, and at the date of his letter, June 29th, ripe fresh figs have been on sale for several days.

Setting Osage Orange Hedges.—J. T. McLain, Morrow Co., O. It will not do to set Osage Orange plants in autumn. The yearling plants are very tender, and need to be taken from the seed bed and protected through the winter, by setting them in boxes of earth in the cellar, or by stacking them up out of doors and covering sufficiently with earth to prevent freezing.

Pinks and Pansies.—J. Bouland. If your pinks are carnations they should have been layered when in bloom. If they are of the China, or other biennial sorts, you must rely upon seed. Pansies strike readily from cuttings taken early in the season from near the bottom of the plant.

Ants in the Garden.—"H. W." We never had much success in fighting ants, but have not tried Mr. Rivers' preparation, which is: boil 4 oz. quassia chips for 10 minutes in a gallon of water, and add 4 oz. soft soap. This is poured into the holes and sprinkled about in the places where they congregate.

Peaches in Niagara Co.—We are glad to learn from a Lockport correspondent, that the promise of peaches was never better than it is at present.

Preserving Celery in Cellars.—R. Reed, Wayne Co., N. Y., asks the best way to preserve celery in cellars, as he finds his to rot by January 1st. The best way to preserve celery is to keep it out of the cellar altogether. Make a trench in a dry place, a foot wide, and as deep as the celery is tall. Set the plants upright in the trench, packed close together, and leave them until severe weather comes, when straw or other litter is to be thrown over, putting it on gradually as the weather gets colder, until it amounts to a foot in thickness.

The Wilson's Early and Kittatinny Blackberries.—The experience of another season shows the great superiority of these varieties. The Wilson's Early is especially valuable as a market fruit, being early and ripening rapidly. We have seen fine specimens from Mr. John S. Collins, of Monroestown, N. J., and shall have more to say of this variety at another time. The Kittatinny has this year more than sustained the high praise we have heretofore given it. It is a little later than the Wilson, and the sweetest and most delicious fruit of any variety that we have seen in cultivation.

A "Mare's Nest" in Vineland.—The Vineland people have discovered that their Wilson's Strawberry plants are mostly "bogus"—a variety we have not heard of before. A committee has been appointed by the Agricultural Society to visit the plantations and point out the true and the "bogus" Wilson. This committee find from three-fourths to one-eighth of the plants to be "bogus." The singular thing about it is that the committee consists of two dealers, who have strawberry plants for sale and benevolently pull up "bogus plants," if paid for it, and also furnish the true for a compensation. This is as a correspondent states, and according to this, it looks like a rather smart operation.

Ferrets and Weasels vs. Rats and Gophers.

The discussion which has taken place in the *Agriculturist* about Gophers, called out a communication from a Western Subscriber, who says he has used the common ferret with great success against the striped Gopher, and suggests its use in exterminating the common Pouched Gopher. The idea is a very good one, and considering that the "common ferret" is one of the most uncommon of our domestic animals, we figure and describe it. To save correspondence we will say that we know not where there are any for sale, but that if our readers want to buy them and see none advertised, they may bear it in mind when they next visit some large city, and then inquire for them of those people who import and sell dogs, singing birds, etc., for they generally keep them.

The ferret is an animal of the weasel kind, only much larger and stronger. It is known in Europe and America only in a state of domestication (but not of tameness), for its native country is Africa, and unless protected in winter in northern regions it will perish from the cold.

This species so resembles the European polecat or fitch that it was regarded by Buffon as a variety of the same species. And it is said that the two animals breed freely together; so that the breeders of ferrets practise crossing them to increase the size and constitution of the ferrets. It seems probable that the color of the ferret, which is commonly a dingy white with pink eyes, is a result in part of domestication, for its natural colors are light brown, sometimes dark brown or even black, the color being more or less in spots. The albinos appear, however, to be most common, and their red, fiery eyes are most remarkable. The ferret is about thirteen or fourteen inches long, the tail being about five inches more. It has great strength and boldness, and when attacking its prey it exhibits astonishing ferocity and nervous excitement.

These animals are bred and used extensively all over Europe, to hunt rabbits, rats and other

small animals. Their natural instincts are so strong that they require no training, though of course they improve by practice, which is called training; the only desirable quality which they may be taught seems to be to allow themselves readily to be caught. They are always muzzled when let out or hunted with, for when one gets

\$10 to \$25 a pair. This makes them rather expensive, especially as they are not long lived as a general thing, being peculiarly subject to disease. We have, however, several native animals of the same family which may be obtained at less cost, and would probably do very good service, if domesticated and trained like ferrets.

The Mink (Putorius vison) is larger than the ferret, and it is said to be easily tamed; doubtless also it would breed in captivity, and, if so, might easily be trained to hunt muzzled and return, or allow itself to be caught, to get its food. It is of the same fierce disposition, and is an implacable enemy to the smaller quadrupeds and birds.

The little Weasel (Putorius pusillus) is most common, although the larger one, known as the *New York Weasel (Putorius*

Novboracensis, De Kay), or *Ermine Weasel (P. erminea, Linn)*, is common, and probably a better rat catcher. The former is 7 or 8 inches long, with a tail of two inches; its color is the same summer and winter, namely, chestnut brown above, and growing darker to the tail, which is black at the tips. The belly is yellowish white, and white beneath the throat. It is readily recognized by its size, and muzzled would hardly drive a fierce rat. The *Ermine*

Weasel is a much more powerful animal, having a stouter, thicker body, larger head, jaws and legs, of very much the same color in its summer dress, but in its winter dress pure white, with sulphur-yellow flanks, and a black tipped tail. Its ferocity is equal or superior to any of its congeners, except the ferret perhaps, and it will attack without hesitation animals much larger than itself. We have no doubt it would make, with only a little training, an excellent

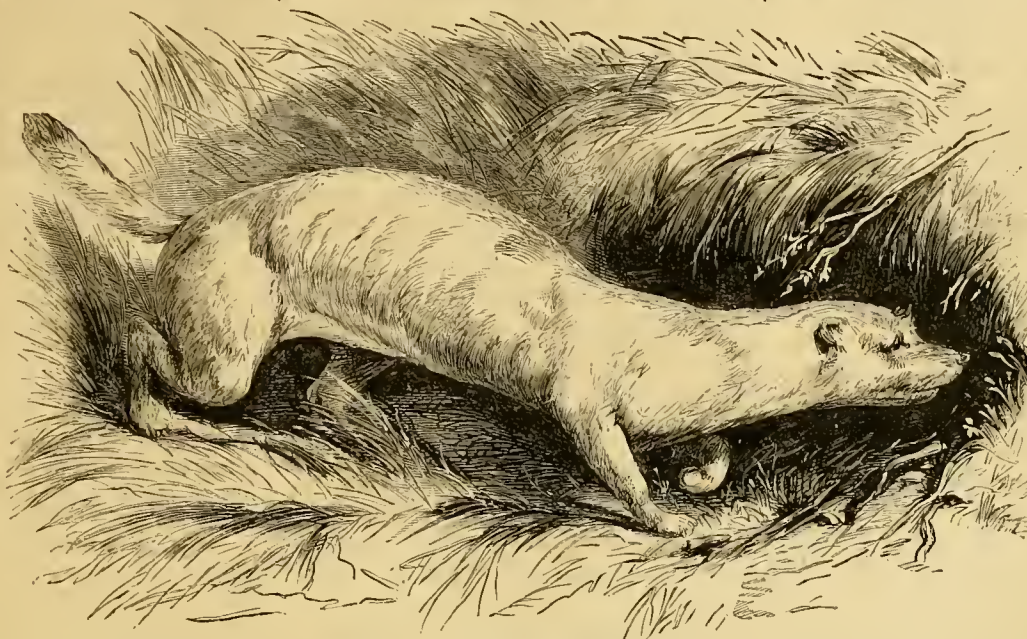


Fig. 1.—THE FERRET—*Putorius furo*.

off its muzzle it is almost surely lost, for it will catch its victim, suck its blood, and then go to sleep. From this sleep or stupor it will not arouse until it has digested its repast, and wakes hungry and fierce for other prey, and where its game is plenty nothing more will be seen of it; but it will perish when winter comes on. Kept muzzled, however, it will return after its hunt to be fed; while the animals are driven from their burrows or holes into nets or snares of some kind.



Fig. 2.—THE ERMINE WEASEL—*Putorius erminea*.

The ferrets, in common with their congeners, the polecat and the weasels, possesses the property of emitting a very disagreeable skunk-like odor when they are irritated or attacked by a superior animal. This makes it necessary therefore to handle them with great care. Their bite is also severe and hard to cure.

The price asked for ferrets in this country is

rather, and equally effective destroyer of gophers. Like the rest of their genus they are nocturnal in their habits, and prone to periods of stupor after gorging themselves. The engraving which we give is of the *Ermine Weasel*.

The weasels are well-known destroyers of rats and mice, and a pair will soon rid barns and granaries of these vermin. Many a farmer

hardly grudges the eggs and chickens that he loses for gratitude for the great favors they do him. Field mice in immense numbers, and also small birds are destroyed by them. In their hunts they exercise no little cunning, which is very like reason sometimes. A friend narrates to us the following as a fact, of which he was cognizant. A pair of tame weasels were kept at the house, and used to hunt the rats with great pertinacity. One rat was too much for the weasel in a fair fight, and would turn and chase it, the weasel running frequently through a certain hole. At once the weasel seemed to be at work filling up the hole; then he dug through, leaving a hole just big enough for himself to pass. Here, the next time the rat chased the weasel, he was brought up all standing, while his little enemy, executing a rapid flank movement, attacked and dispatched him in the rear.

Tim Bunker on the Cotton Fever and Emigration Down South.

MR. EDITOR,—I was a good deal taken aback by my talk with John, about which I wrote you in my last. You see Mrs. Bunker and I had never thought of anything else for him than our own home in Hookertown, and that he would want to live and die in the house in which he was born. We had not considered what a change three years was to make in him. He went away a boy, he came back a man with notions of his own, and the reasons to back 'em. There was no disguising the fact that it was something more than a boyish freak that he had taken, to carve out for himself a new home in the sunny South. I turned the thing over in my mind, and I could not get round the argument. I had had my chance in Hookertown, and made my own home and fortune without any boosting. Why shouldn't he have his chance in a spot of his own choosing? He has seen the land and tried its climate, and was capable of judging for himself. If he could not stay at home without a feeling of constraint, why the sooner he was off the better. A contented mind is a continual feast, and without that a man must be a drudge anywhere.

So we give up arguing, and conclude that John had quite as good a right to dispose of himself as we had. If he felt he had a mission down South it might be as sacred as any other, and it didn't become us to stand in the Lord's way. Perhaps he had something better in store for John than Hookertown. They say old people, and some that are not quite so old, come to think that they live exactly in the center of creation, and that there is no spot quite equal to their town and their part of it. Even Mr. Spooner preached his new-year's sermon on being "Content with such things as you have," and undertook to show that the western hemisphere was the best part of the world, that the North American Continent was greatly superior to the South, that the United States was the best part of the Continent, that Connecticut stood head and shoulders above all the other States, and Hookertown was the cream of the land of Steady Habits. I don't want to stir up the jealousy of Boston, or any other respectable village, but I endorse Mr. Spooner's opinion—I thought all the while he was a preaching that he had a squint toward the folks who were so fast for going down South—and he owned as much afterwards. But preaching won't save a man who has got the cotton fever. You might

as well undertake to preach total depravity out of him. It will work out.

"D'ye 'spose, Squire, there's any chance to make money in this cotton business?" asked Jake Frink this morning.

"Certainly," said I. "Growing cotton is just like any other business. Some men who have capital and skill will go into it and prosper, and others will fail for the same reasons that they would fail in any thing. It does not require any more intelligence to manage a cotton plantation than it does to work a northern farm, and hardly so much. It has always been done by the rudest kind of labor. There is no doubt that the skill acquired in growing the dozen or more crops we raise here in Hookertown, will come to a good market in the South."

"How much capital is required to raise cotton?"

"Just as much as to raise corn or potatoes, and the more one has the better he can make it pay, up to the point where he can command all the labor he can see too. There is no difficulty in growing cotton in a small way, if you are where you can use another's gin and press. But the better way is to have a large plantation and use your own gin and press."

"I like the notion of using your own gin, Squire, for I don't think I should stand much of a chance of borrowing unless folks down there are different from the Hookertown people."

"Very likely. But the gin you have in mind won't help the cotton harvest any more than it does the hay."

"Well I don't see," said Jake despondingly, "as there's going to be any chance for me down there. Kier is going, and pretty much all the folks in the White Oaks, and I thought I might as well go along, but if it takes such a heap of money I shall have to give it up."

I could not encourage neighbor Frink to join the expedition, for he and the class of men to which he belongs will not succeed either North or South. They are a good way past their prime, and their habits are bad.

But young men of good habits need not hesitate to go, even though they have small capital. Skillful labor will for a long time command a good price there, if labor is all that one has to put in to the market. The unfriendliness of the climate to the white laborer is greatly overestimated. This story has been industriously circulated by interested parties, as an apology for slave labor. When I took Mrs. Bunker down to New Orleans seven years ago, I found the most of the labor about the wharves and cotton presses was performed by men of European birth. Irishmen and Germans were plenty as laborers and mechanics, and they suffered as little inconvenience from the heat as Africans. When I went up on to the cotton plantations, I found the planters employing Irishmen to ditch and drain where they would not put their negroes. I found Scotchmen and New Englanders settled there, and enduring the climate perfectly well. It is well known that multitudes of Germans and Hungarians have gone into Texas, still further South, and there raise cotton quite as safely and more economically than it could be done by slave labor. Our soldiers have stood the climate well, and it is my private opinion that labor in a cotton field isn't any harder or more dangerous than fighting. That's the opinion of the boys who have spent two and three years there in places where they couldn't always take care of themselves. I guess it will do to risk them when they can build houses of their own, and have the comforts of northern homes around them. The fact is, climate has

the credit of a good deal of mortality that really belongs to whiskey. Of course in clearing up a new country there will be exposure to malaria and sickness. But when the forests are cleared and the swamps are drained, as they will be by northern skill, the risk of health and life will deter no one from going South.

Capital will be the great want of the emigrant to the South. There is plenty of cheap land to be bought, and plantations enough to be cheaply leased. Money must be had for this, and for stock and labor. According to John's figuring, a man wants forty-four dollars for every acre in cotton. If he was going in for 500 acres of cotton the outlay would be

For stock, seed and implements.....	\$ 6,305
Supplies for 60 hands—say 1,200 bushels of corn,	
120 barrels corn meal, 84 barrels pork, 15	
bushels of salt, 10 months wages at 15 dol-	
lars a month, and incidentals.....	14,875
For rent of land at 10 dollars per acre.....	5,000
	\$26,180

The stock and implements would be worth three-fourths their first cost or more at the close of the year, and this amount may be deducted for the second year's operations. Sometimes the cotton can be sold by Oct. 1st, and the money realized go to pay the expenses of the year.

The returns for such an investment will of course vary with the yield and the market price. The average crop, as planters estimated it under the old system, was—one bale upon alluvial, two-thirds of a bale upon "hard bottom lands," and half a bale upon upland. With free labor this yield would probably be exceeded. The bale is rated at 400 pounds. At a bale per acre, and cotton at 30 cents, the crop on 500 acres would be worth \$60,000. At a half bale per acre it would be worth \$30,000. The lowest estimate gives near fifty per cent. profit. The highest near three hundred.

Here is great temptation for northern skill and capital. With any thing like a fair chance, money must be made at it. It isn't strange that the cotton fever rages and carries off our people. The boys have all started, and I suspect the girls will—be sent for.

Hookertown,	}	Yours to command,
Aug. 16th, 1866.		
		TIMOTHY BUNKER, Esq.

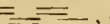
The Sorghum Syrup Crop.

We know of no other crop ever having been introduced among agriculturists which grew so rapidly in popularity as has the Sorghum. Many circumstances have conspired to render the product more valuable than could have been expected when it was first introduced, and now, after 10 years experience, we have seen it grow constantly in favor and its culture so extend, that in many districts, in widely different parts of the country, it is regarded as one of the staple crops, ranking with corn, potatoes, wheat, etc., in importance. The profits per acre, at the present prices of sugar, are larger than those yielded by any of the staple crops, except perhaps tobacco and hops. We have never known any one who began to raise it and who possessed a mill and evaporator, or could easily get his cane to them, who gave it up.

The syrup—gained by simply boiling the expressed juice, skimming off the feculent matters which rise as scum to the top—is often of very good quality; and under other circumstances of soil, manuring, maturity of the cane, etc., it is very poor, acid, and colored; still the poorest qualities may be purified and refined, so it all has a market value, especially in those parts of the country where it has been most grown. The improved evaporating pans, of which sev-

eral claim the favor of the public, enable a common hand with a modicum of good judgment to produce clear well-flavored syrups in most cases, which sell as high as, or higher, than good W. I. molasses, and answer all the purposes for which that is used in our kitchen economy. The prospects now are, if the weather continues favorable, that the yield of syrup this year will be vastly greater than ever before.

Within a year or two the discovery has been announced, and to a good degree confirmed, that the earlier the cane is cut, the more sugar is obtained in a crystallizable form. We have always held that the quantity and quality of the sugar separated from sorghum syrup was such, that it was much better not to aim at its production, but rather to produce syrup. What we have seen, with the exception of a few samples, was gummy, lacking in sweetness, and not as thoroughly crystallized as good sugar should be. However, if it be a fact that cane cut and worked early will yield a paying percentage of good sugar, it may greatly alter both the product and the profits. It must be remembered that green cane abounds in feculent matters.

In harvesting the sorghum, it is primarily necessary to cut it before hard frosts and to have it housed or protected from them. It is immaterial probably whether the topping and stripping be done at once, or later, and practice differs. The stripping is conveniently done by the hands, which must be protected with leather mittens, or what is better, square pieces of kip skin, to cover the palms, in which a fold may be sewed for the thumb to go in, and if necessary a strap may be sewed upon the back to go over the two middle fingers. As the cane stands, it is stripped from top to bottom at one motion, the leaves being laid between the rows. After this is done, upon as much ground as it will take several hours to cut, the stalks are cut at the ground, and laid between the rows in gables, resting upon the leaves to keep them out of the dirt. The tops, with about three feet of stalk, are cut at the same time, so that the gables of cane may be bound at once. The bundles should be of a size convenient to handle, and bound with two bands, which may be made of the leaves if not too dry. The tops are also bound in sheaves to be cured and fed out in the bundle or threshed. The leaves make very good fodder, being considered superior to corn fodder, of which, however, we have some doubt, for we value corn fodder very highly. These operations are laborious and tedious, so much so that at the West, where the relative value of labor is high, some farmers do not strip, but pass both stalks and leaves through the mill, even at a loss of considerable juice in the more bulky bagasse. The cane is best when the bundles are at once removed to the shelter of a roof of some kind; but when this is not practicable it should be piled up like cord-wood, and covered by a course of boards laid edge to edge and battened, or laid to break joints thus , or in some other way, protected from the weather and from freezing. It may be worked any time before hard freezing weather.

The time to cut the cane is said to be when the seed begins to turn brown, that is, when it is in the milk. At this time certain changes are going on in the stalk, which are not perfectly well understood; this much, however, is certain, that some cane sugar exists there together with a considerable portion of grape sugar, that the former is converted into the latter in the process of ripening, and that as the ripening pro-

gresses, a considerable portion of the grape sugar is converted into starch and woody fibre. It is probable also, that at an early stage much fruit sugar exists in the sorghum. This differs from grape sugar in being much sweeter and never assuming the crystalline form. Cane sugar crystallizes very readily, as we all know, for this is the common sugar, brown and white, which we use, derived from the Southern cane, from the maple, from the beet, etc. Grape sugar is much less sweet, 5 parts sweetening only as well as 2 parts of cane sugar, or of fruit sugar, which is as sweet as cane sugar. Honey contains both grape and fruit sugar. That portion which solidifies when honey becomes candied, is grape sugar. When grape sugar crystallizes, it usually forms fine needle-like crystals, grouped in such close masses that no crystals can be seen. It attracts moisture from the air, and becomes a pasty mass. Most of the sorghum sugar we have examined is a mixture of cane sugar crystals which are very distinctly seen, together with the gummy mass of grape sugar, and more or less molasses. When cane sugar is subjected to the action of a ferment or any acid, it changes rapidly into an uncrystallizable sugar, which in its acid and more or less impure state we know as molasses, and which is very similar if not identical with fruit sugar. The juice of the sorghum contains more or less acid, a green substance which promotes fermentation, also an albuminous substance which is a very active ferment in its natural state, and which, on being changed by boiling if any be left in the syrup, gives it a disagreeable flavor.

It is important that the canes be bundled and kept so that they will not be bruised, whereby air would come in contact with the juice and corrupt it. They should be thoroughly ground as it is called, that is, passed between rollers, so as to express all the juice possible at one operation. The juice should be exposed in the least possible degree to the air, and if delay is unavoidable, a very small quantity (1 or 2 pints to 100 gallons) of bi-sulphite of lime should be added, the operation of which is to arrest any incipient fermentation. The juice should be boiled down in flat pans as rapidly as is consistent with thorough skimming. If it is very acid, milk of lime is added, using seldom more than a pint to 30 gallons. Towards the latter part of the operation, the syrup should not boil, for the albuminous gummy substance will rise like cream upon the still surface, and may be removed. If the boiling continues rapid, it will not rise, but remain floating in minute particles through the syrup. The syrup is evaporated until it has, on cooling, the thickness of molasses.

There are several excellent evaporators of well-established reputation, with which, as we have said, any one of common sense can make good syrup, and if the juice contains cane sugar, this may also be obtained. To this end the syrup is evaporated considerably more than the consistency named, namely, to 38° or 40° of Beaumé's Saccharometer, while 25° to 30° is a sufficient density for syrup. On cooling and stirring, the sugar forms, and may be separated in a crude state by draining off the molasses.

THIN OUT AND HOE THE TURNIPS.—Success with any root crop depends upon keeping down the weeds and keeping the ground open and mellow. We charge our readers to remember that a turnip plant within two, or three, or six inches of another, is just as much a weed as a mullein or ragweed. It is no place for any plant, where it will interfere with the

full development of a more valuable one. Turnips never ought to stand nearer than eight inches apart, ten or twelve on an average in field culture is about right. Those which being crowded are checked in their growth do not yield nearly so much per acre, and they are stronger in flavor, and more pithy in texture.

Northern Men for the South.

It is true that the South is now open to Northern capital and labor, and that there are very good opportunities offered for Northern men with little capital, to do very well for themselves and their families, in many parts of the Southern States. A good many men are going thither, who are steady, industrious, good men; some men who have been unlucky and have not succeeded exactly at the North, either from bad judgment or sloth; a few others, restless spirits, go because they think there is a chance to speculate and get money by not working hard for it. No one goes expecting to take a similar position to that which he has at home—he aims at something better. Our Southern correspondents who write us enquiring about the chances of getting Northern men to come to take charge of their farms and plantations, and to do the labor upon them—to manage their dairies—and do all sorts of things, seem to realize only that Northern folks are not afraid to work, and that they will do any kind of honorable labor if they are well paid for it. This is true, but it is also true that intelligent men, such as they want and would be satisfied with, are a good deal more intelligent and *smarter*, to use a common expression, than many, if not most of the men and women who want to hire them. They may not all be able to write as good a letter, though many of them will better. They would not appear as well in an evening party, perhaps, but for the real business of life are their equals. These men and their families go South expecting to become land owners, to take positions in society equal to anybody—to carry their principles with them, whether they are Democrats, Republicans or Radicals, to sell their labor, their knowledge, their abilities to whoever they make agreement with; but to be bound to nobody, except, for mutual advantage, they be *mutually* bound. If Southern landowners want such men they may advertise for them, or secure them in any way; and if they will give them a fair chance, no doubt they will gain the services of good farmers, dairy folks, etc., and good, moral, substantial, freedom-loving citizens.

Some such chances are afforded. There are, besides, fine lands in Virginia, Tennessee, Missouri and Arkansas, and indeed in every other Southern State, offered for sale cheap; and if Northern men would associate themselves and purchase farms in the same districts, so that they would be a moral aid, if necessary, a physical support to one another, there appears to be for single men, or families desirous of emigrating, no more favorable prospects anywhere else.

Any class of men who are kind to the negroes, get them to labor for them freely; but those planters who attempt to control the labor of the plantation in the old way, find no end of difficulties. Among this class newly arrived immigrants will and do find profitable employment; and, as at the West, habits of frugality and industry will soon be rewarded by competence, and the immigrant will surround himself quicker than he could in New England with land and home of his own. It must not be forgotten that the difference between these two

classes of settlers is, that the New England emigrant leaves a competency, home, land and all, and moves to *do better*, while the European immigrant comes to this country to *make his home*, and a home for his children after him.

Chicken Medicine.

We continue our discussions of the subject of chicken ailments, because we hope to give our readers in-

formation by which they may profit, and to receive hints from them, and so, by and by, get facts enough to enable breeders to successfully study and treat the diseases of poultry.

Parasites. — Lice, are among the most annoying of the troubles which the poultry raiser meets with, and remedies quite successful in one yard fail altogether in another. The reason doubtless is because there are several kinds of lice which occur in our poultry yards, and the remedy entirely efficacious for one may not affect the others.

We published some time ago the statement of a correspondent who drove the lice out of his nest boxes by using the leaves of the button-ball tree raked up in the fall. The following from G. T. H., of Beverly, Mass., gives another similar remedy, and one which may be employed at any season of the year.

"For a number of years past I have kept from 20 to 50 hens, and they used to be much troubled with hen lice; and though I kept my hen house (as I thought) pretty well whitewashed, at times it was overrun. I was told if I made roosts of the Sassafras wood, it would surely drive the lice off. Not being able to get that kind of wood for roosts, I set about devising a substitute. One day I came across a large bed of common tansy. I gathered a good quantity, took it to my hen house, and made several nice nests. This was done in the summer of 1864. Last season I renewed the tansy. When the lice left I know not, but this I do know, I have not seen a louse, or the sign of a hen louse, about the premises for more than a year, and I have examined the hens pretty often and thoroughly."

In order that our readers who are interested in this subject may investigate the parasites more understandingly, and specify the kind of louse which certain remedies drive away or destroy, we give pictures of four kinds which are the only ones figured, as found upon the domestic fowl, by Mr. Henry Denny, in his work on the lice of Great Britain, called *Monographia Anoplurorum Britannicæ*. We know of no English names, and for convenience coin some.

The Big-bellied Hen-louse (*Goniocotes holo-gaster*), fig. 1, is an eighth of an inch long; its head, thorax and legs, are of a pale yellow color, with pitchy black marginal bands, and its very large abdomen is girt with pale ash-colored bands (*fasciæ*), bordered with black.

The Big-headed Hen-louse (*Goniodes dissimilis*), fig. 2, has a length of a little over one line ($\frac{1}{12}$ of an inch.) It is tawny, smooth, shining,

somewhat downy or hairy; head large, with prominent temporal angles, abdomen large.

The Long-bodied Hen-louse (*Lipeurus variabilis*), fig. 3, is $\frac{2}{3}$ of a line long, of a dirty white color, margined with black. The head is dome-shaped, pale yellow, with a black spot on each side behind the eyes. The abdomen has an interrupted (broad and narrow), dusky band running lengthwise down the centre.

The Pale Wandering Hen-louse (*Monopon*

so, virtually, making the fence by so much the higher. This plan, on soil upon which it will stand, has several merits, which we think are worthy the consideration of even those farmers who are so well pleased with their own plans. We have not yet heard particulars from Mr. McLean, but taking the simple statement above, it is evident that the walls stand. The reason is, that no water can stand near the wall, and so the heaving of the earth by the frost affects

earth, foundation and wall, all alike.

"R. S.," of Norfolk, Conn., writes, quoting the statement referred to: "If you would see the best stone fences you can build perfectly prostrated in 8 or 10 years, build them upon a ridge thrown up 18 inches high, and my word for it you will not be disappointed. If, on the other hand you desire good and permanent fences, 'take six inches from the surface and plant good substantial stones in at the

bottom; (see fig. 1,) then build the remaining part well, and you have a fence that will be with you and in good shape most likely during your sojourn here. Thirty-five years' experience in wall-laying confirms me in this belief."

"A Subscriber," of Tingsboro', Mass., details his own experience as follows:

"I dig a ditch (see fig. 2,) or trench, where I wish the wall to stand, as wide as the foundation of my wall, and as deep as the soil is suitable for making manure, (I think the soil thus obtained pays for the labor of throwing out);

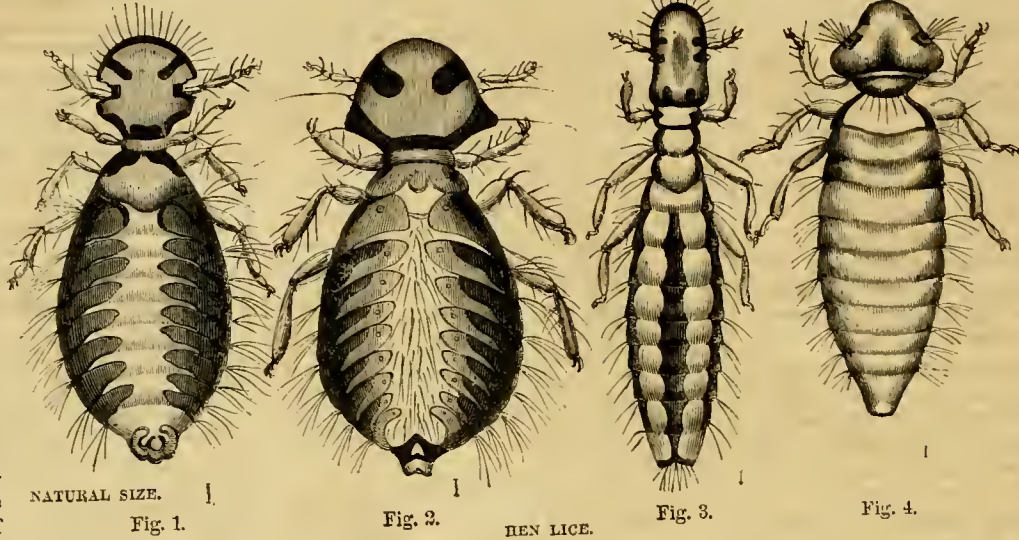


Fig. 2.

land, and furnishing a material for a foundation on which a wall, no matter how heavy, will stand for years. My father has walls upon his farm built twenty years ago, upon the same plan, from which not a stone has been thrown by the action of the frost. The plan is adopted by many farmers in this vicinity, and well liked."

These plans will both answer well upon certain soils and situations, but not upon all. R. S.'s plan, for instance, does not secure a dry foundation in clayey ground, and we know many a piece of land on which such walls would surely fail. Nevertheless, they are economical, lasting on soils where water will not stand. The second plan is better, for the small stone foundation affords drainage, which would leave the wall dry if there were only a slight inclination of the ground. There should be provision for taking off the water from the low parts on the line of the wall.

The plan of building a wall over a good stone drain is approached in this case, and where the soil is not full of water, the shallow drainage thus provided for would answer a good purpose



NATURAL SIZE.

Fig. 1.

Fig. 2.

HEN LICE.

Fig. 3.

Fig. 4.

pallidum), fig. 4, has an elongated body of a pale straw color, shining and smooth. The head is slightly hollowing on each side, with pitchy black spots. It is from $\frac{1}{2}$ to $\frac{3}{4}$ of a line long, and is found in great abundance in neglected henneries upon the roosts, etc., and usually first noticed by its running over the hands, from which it is difficult to brush off on account of the smoothness of its body, and the tenacity with which it clings with its sharp claws.

The use of mercurial preparations is always dangerous, unless conducted with extreme care. These are always fatal to lice of all sorts, but can only be used upon the polls and necks of adult fowls (where they can not reach with their beaks), for, in drawing the feathers through their bills in pluming themselves, they would be surely poisoned. Dixon recommends the use of white precipitate dusted upon the heads of young chickens, three or four days old. Greasing fowls is a temporary relief, but it does not clear the lice out of the nests or from the roosts, and unless the application be followed up, there is no security. The grease is applied any where; but under the wings and upon the poll and breast is best, for here the lice are usually found.

All other varieties of poultry, and wild birds besides, have each their distinct kinds of lice.

Stone Fences.

The statement made in regard to Hon. John McLean's stone walls on page 130 (April), has elicited several letters of dissent from farmers who also rejoice in having their stone walls stand well.



Fig. 1.

It will be remembered that Mr. McLean's walls are built on ridges of earth thrown up 12 to 18 inches high, the ground used for the ridge being taken from each side, and

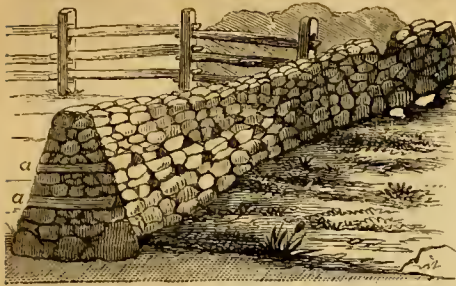


Fig. 3.

as stated by "A Subscriber." The best walls we have seen were built over broad and deep stone drains, which were brought to the surface, and really formed the foundation of the walls.

A few weeks since we saw a good wall upon the farm of a friend in Hartford County, Ct. It was very simply laid up, the foundation stones being the largest ones, of course, and being barely bedded in the soil, but on a formation of ground where water would not stand. The peculiarity of construction consisted in "tying" the wall with pieces of fence rail, cut of suitable width, and laid up athwart the wall, with the stones as indicated in fig. 3, by *a, a*. These tie pieces were arranged in two lines or rows, about midway of the height of the wall, and $2\frac{1}{2}$ to 3 feet apart in each row. This wall has stood very even and firm for many years, while a wall of an adjoining proprietor, built of the same kind of stones, and in the same way, omitting the ties, has been in spots nearly shaken down by the frost, and stones are misplaced throughout its whole length.

The Needed Reform.

It may be remembered that in the *Agriculturist* for January there was an article on a "Needed reform and its profitable practice," which described a way by which all the contents of the privy were saved for manure in an entirely inoffensive form. The method there suggested of saving this exceedingly valuable manure (to mingle it with well-dried peat or swamp muck) is excellent, and can hardly be improved, except, perhaps, in the use of artificially dried soil, as in the earth closets alluded to in the last number, p. 286. Very dry muck is probably better than earth, though we have no experiments showing which is best, and as peat has a considerable value for fuel in England, soil has been used, and its virtues perhaps unduly exalted. "B. C. F.," of Port Jervis, sends us a plan of a drawer for a privy which may, with little expense, be attached to almost any one, and so the contents be easily removed to the compost heap, or where it can be immediately utilized. He writes as follows: "The accompanying diagram will explain this, and give an idea of how the difficulty may be overcome, and at the same time have a conveni-

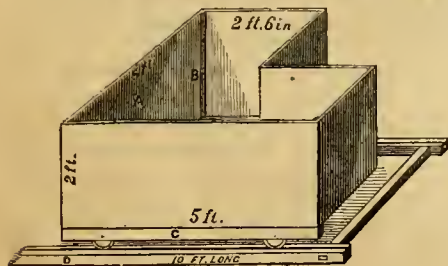


Fig. 1.

ent situation, as I have, with a good Grape Vine screen; in fact it is ornamental as well as useful. The diagram (fig. 1) shows a drawer made

of inch boards, 5 feet long, 5 feet wide, and 2 feet deep, of a shape to extend under the seats. Under the outside edges are two hard wood sticks, with grooved wheels let in, which are nailed to the drawer. This drawer moves on a hard wood frame 10 feet long and 5 feet wide, with strips of half round iron screwed down, forming a track for the wheels, and by this means you are able to pull the drawer with ease clear of the building, and remove its contents. The depth of pit should be 3 feet, and filled in with gravel to the required height for the frame. The building should stand at least the width of two bricks above the ground to preserve the sills, and the foundation should be set in mortar or cement. Cover the 5 feet space in the rear with a trap-lid with rings, or hinges screwed to a frame."—With formations of ground, as would admit of it, this would be the best plan perhaps, but we have seen another form of drawer or box used, which is preferable when the ground has a slight slope. The box (fig. 2) is supposed to be, say 5 feet long and $2\frac{1}{2}$ feet high. It is made of inch stuff, and set on a pair of 4 inch blocks, or a single pair of wheels. The shape of the box is such that it will tilt forward unless braced up as shown in the engraving, or at least may easily be tilted forward. This enables a man to shovel over the contents and add fresh muck or soil. When full, two men will move it anywhere on hard ground, or it may be pulled out and the contents shoveled into a cart or upon the compost heap. In these cholera times when people's minds are dwelling so much

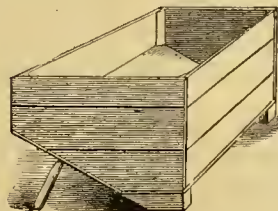


Fig. 2.

upon sanitary measures, there is hardly a more important subject than clean, neat, odorless privies, that can receive our attention.

It is hardly necessary for farmers to attempt to dry and work over the muck or soil several times, though, should they do so, the compost, "poudrette," or whatever it may be called, would be so much the stronger. Yet the manure made by once using the muck is strong enough for most purposes—fully as strong as good barnyard manure, and the working it over would involve to most farmers as much or more labor, as obtaining an equal quantity of fresh material, muck or soil, of proper dryness.

Yet Another Bag-Holder.

Yes—Another Bag-holder—the simplest yet, and one of the very best as well as most easily obtained. Many a man would rather go half a dozen miles, and then buy what he can make himself perfectly well in half the time, just because he never can make any thing to suit him. So as most of the bag-holders we have described require a little ingenuity to make them, no doubt many go without the convenience. Here, however, is one ready made, a barrel with both heads out, and a few nails driven in between the staves and hoops at one end. The sketch is sent for the benefit of *Agriculturist* readers by "Michigander," of Hastings, Mich., and as we have tried it and found it to answer, we present it to our readers. A common grain bag in most parts of the country is longer than a barrel, and may be hung over four nails in the top of a barrel, and still be slack, touching the ground. The bag is spread and hung over the



BAG-HOLDER.

nails as shown. The measure may be rested upon the chine of the barrel, if desirable, and when the bag is full, the barrel may be lifted off.

Cows for Milk and Butter.

That the milking qualities of cows are hereditary no one will deny. They come from both sire and dam, and it is claimed, not without some foundation, that heifers take after their sires' dam in regard to milking qualities oftener than after their own dams. This may be true in some cases, but not in all, and especially not in crossing bulls of pure breeds on common milking stock. We often have letters like this:

"Will you have the kindness to give me some information about cows for milk and butter purposes. I want to breed especially for milk and butter for family use, and want nice cows, with a good supply of good rich milk and butter. I want to establish a herd of this sort for home use, and to supply the country demand. What breed shall I select from?"—Buy the best common cows you can, which are good rich milkers. Use upon them a pure blooded bull. If you use an Alderney bull you are very sure of rich milk, but small size in the progeny. If you use a Dutch bull, you will get large frame and probably much milk of medium quality. The Ayrshire cows will give a medium quantity of milk of fair richness, while the Short-horn cross will be likely to produce stock giving a good quantity of milk, the quality variable. The tendency to give much milk is increased in heifers by letting them have calves very young, milking three times a day, and giving succulent, rich, milk-producing feed.

The Mississippi Levees.

Our readers are probably aware, that during periods of high water in the Mississippi, a large part of Louisiana was once entirely submerged, especially that portion lying south of the mouth of the Red River. The channel was incapable of carrying the water, and so it overflowed, making other channels to the Gulf, and deluging the adjacent country. The Atchafalaya and Plaquemine are the principal of these channels, and these have been throughout their whole extent, nearly, carefully embanked. When the river bursts through the embankments, the break is called a "crevasse." Through these torrents flow, doing unspeakable damage, tearing up the land and depositing earth and sand in bars here and there. Where the water remains with little motion, deposits of rich soil are made. Enough sediment is brought down the Mississippi River every year to cover 125 square miles, 1 foot thick with solid soil. The entire area of the Delta of the Mississippi is about 14,000 square miles. As the population increased, planters,

who at first occupied the higher ground, began to secure themselves against the overflows by low embankments, raised just high enough to turn the water off from their own property. As the number of these "levees" increased, of course the river rose higher and higher in its bed, and so the levees had to be raised and made stronger, until finally it came to pass that the governments of the parishes and of the State took hold and regulated the matter.

The U. S. Government had an elaborate survey made of this whole country, by which a vast amount of information was gathered, and the foundation laid for proceeding understandingly with one of the most important agricultural public works which any government ever undertook. Congress has recently refused to pass a bill to reconstruct the levees which have broken down more or less in consequence of the war. This is well perhaps, for the subject had hardly been sufficiently considered either by the Congress or by the people. Millions of acres of the very best farming lands in the world are rendered entirely unproductive by the danger or by the reality of overflow. The lands might properly be assessed to pay for the works and their maintenance. Levees alone are not what is wanted, but a system of canals by which the surplus water may safely be drawn off and conducted into the Gulf, should form an important feature. With proper engineering, the overflowed lands of the Southern Mississippi would become the very garden of the world. Corn and sugar cane, are the staple crops. Figs, oranges, pecan nuts, etc., for which the markets of the world are open, grow almost wild—while sweet potatoes, yams, peanuts, melons, and almost all sorts of garden vegetables are produced with a luxuriance, which a Northern man will only believe when he sees. Is not the redemption of these lands a work for the Government? The poor, bankrupt rebel States can not think of appropriating the money to it, while private enterprise can only work on the old plan and strengthen its own levees.

Walks and Talks on the Farm.—No. 33.

Last year we raised a nice lot of yellow Danvers onions, and sold them to a man to take to Canada. We took them to the steamboat landing and got there just as the vessel was seized for smuggling whiskey. Of course, I had nothing to do with that part of the business! But I had to bring the onions home—a hundred bushels or more, and before the men got back it rained heavily and wet the onions. I had no convenient place to store them, and the only thing I could do was to set them out for seed.

I had no experience in raising onion seed, and determined to do the work as expeditiously as possible. I marked out the land with a corn marker, then ran a plow along the marks, turning up a shallow furrow, and then set the onions six or eight inches apart, and covered them with a plow. The work was soon done, and I concluded that if the onions failed the loss would not be very great. This spring I ought to have gone over them and removed the earth just as the onions were starting, but as it was merely an experiment I did not feel willing to incur the expense. Well, many of the onions died, and I have rather a spotty piece of seed. But I planted beans in the vacant places, and on the whole shall probably get pay for the labor. The land was in prime condition, and the onions being thin, the heads are very large, and I think we shall have some splendid seed.

One of our largest seed-growers was here a few days ago, and thought, "I should not grow any more onion seed." I told him that he was greatly mistaken. The fact that I had not succeeded very well in the first attempt, was precisely the reason why I should not abandon it. I have read an anecdote somewhere of the Mother of the Wesleys. She did not teach them their letters until they were five years old, and all of them but John learned the alphabet in a single day. But John was stupid. He could not remember his letters. It seemed as though he was destined to be the dullard of the family. At length the discouraged mother told her husband that she would have to give up John. She had tried and tried to teach him his letters, but he could not learn. It was no use trying any more. "But, my dear," he said, "if you give it up now, you will lose all you have done." She tried again, and that time John succeeded and gave his mother no further trouble.

One of my neighbors took a lot of cattle to New York, and the market happening to be a declining one, he lost a thousand dollars by the transaction. "But," said he, "I told those fellows down there that I had merely lent them a thousand dollars and that they would have to pay it back with compound interest." He believed in "looking for money where he had lost it." I don't know whether he has succeeded or not. "Sam has been sick" a good many market days since then, and possibly the money is still at interest. But the principle is a correct one. If you fail, try again.

"Not raise any more onion seed." I should feel ashamed of myself. That man will make a poor farmer who abandons a crop on account of a single failure. One failure at the outset will teach him more than a dozen successes.

"But," said my visitor, "I should think you would not like to have a poor crop close by the road, where everybody could see it—and you, an agricultural editor!"

"As an agricultural editor, judge me by what I write.—As a farmer, by what I practice. Don't mix things up. Perhaps I ought to write better for being a farmer, but I don't see how I should farm better for being an editor."

"Those who preach, should practice. You give advice to others; ought you not to follow it?"

"I do not 'give advice.' I state what I think the best methods, and if they are the best, and others act upon them, I do no harm. If I do not adopt them myself, it is my own loss—not theirs."

This seemed to him an entirely new view of the matter. Of course, I do the best I can. But where is the farmer that is always able to do just what he thinks ought to be done—and at just the right time?

Yesterday I was drawing in wheat. We had had several heavy showers, but the wheat was finally dry, except at the bottom where it stood on the damp soil. About nine o'clock, after the dew was off, I set the men to pull over the shocks so that the butts would be exposed to the sun. The day was perfect, and we pulled over the whole field of fourteen acres. By eleven o'clock the wheat was in prime order, and we commenced drawing in with three wagons. We got in five loads, the men worked with a will, and in five or six hours the whole would have been in the stack. "But see that dark cloud! Is it possible we can have rain on such a day as this?" The Deacon was appealed to, but thought it would not rain. The barometer fell a little, and presently a clap of thunder was heard in the distance. But the cloud is passing

off to the North and we shall escape. Shall we? The cloud took a short tack, and in less than three minutes it poured such a flood of rain upon us that it was only by quick work that we could throw straw enough on the stack to keep it from being soaked to the bottom.

Of course, my critical neighbors say I was foolish to pull over all the shocks and get caught in a shower. Perhaps I was, but I would rather have grain spoil in the field than in the barn, and had the shower held off four or five hours I should have hit it—as it was, I missed it.

But no matter, I was more fortunate with my clover. I got in thirty-three acres without a shower—or at least without one that did any harm. And what is better the clover was heavy, and I have three noble stacks that ought to fatten a good many sheep next winter. It looks now, too, as though I should have a good crop of clover seed. The rain which has interfered with the grain harvest helps the second growth of clover. The potatoes, too, grow like weeds.

The Deacon says I hit it with my potatoes. I plowed the land in the fall and spread some well-rotted manure on the surface early in the spring, and cultivated and harrowed it in, and then planted the potatoes without plowing. A finer growth of vines I never saw—and while you sometimes get vines without tubers, you never get a big crop of potatoes without a good growth of vines. They should be thick and strong, not long and spindling. Some of them may be a little too rank, but we shall see.

There is one thing I should like to know: When you let clover go to seed, does it weaken the plant so much that you cannot look for a good crop the next season? I have had no experience, and do not recollect seeing the matter alluded to in any of the agricultural books or papers. But from what I know of the habits of the plant, I should think, that after it has once perfected its seed, it would make only a feeble growth the next season. Ordinarily, timothy is sown with the clover, and the year after the clover seed is grown, the next crop is principally timothy with only a little clover. But in my case I sowed nothing but clover, and if this fails I have nothing to occupy the ground. If it does fail, I suppose the fact can be ascertained early enough in the spring to allow the field to be plowed up and planted to corn.

I am not sure if this would not be a good system of rotation. We might need more manure than most of us can command to carry it out to the best advantage at first. But when the land was once in good heart, it would not be difficult to keep it up. We should have, say wheat seeded with clover; the clover mown for hay the next season, and for seed in the fall. Then, if you can spare it, top-dress with manure. This would probably give a good growth of clover that could be turned under immediately before planting. I would plow it well and harrow thoroughly, and then drill in the corn every day as fast as the ground could be got ready. This cannot be done if the corn is planted in hills. You must wait until the whole field is finished before you can plant a kernel. The plowing need not be done until the weather is right for planting. The ground would be warm, and a clover sod of this kind might easily be made as mellow as a garden. The corn would be soon up, and the cultivator could be run through the rows as soon as you could see the corn. You can drill in corn with a machine that takes two rows at once, much straighter than it can be planted by hand, or at

least straighter than it usually is planted. On such a clover sod, nearly all the hoeing can be done with the cultivator. The clover will decay and furnish food for the corn, and if thoroughly cultivated, a noble crop will be obtained. After the corn is off, plow the land in the fall, and the next spring run a three horse cultivator through it once or twice, harrow and drill in barley. Follow with wheat in the fall, and seed down with clover again in the spring.

If we are ever able to get Peruvian guano, or some other equally good artificial manure, at a reasonable price, it would pay to give the wheat a dressing of two or three hundred lbs. per acre in the fall. It would help the wheat a good deal, and would greatly increase the growth of the clover. The barley, too, would be much benefitted, especially if sown early, by a similar dressing of guano or other good fertilizer.

As soon as we were able to afford it, I would top-dress the young clover in the fall, after the wheat was off, with some well-rotted manure. This would give a heavy growth of clover for hay early in the season, and in addition to this it will insure a good crop of clover seed.

"You have no timothy." No. We cannot afford to raise it on the upland portions of the farm. It impoverishes the soil as much as a crop of wheat. Raise it on permanent meadows on the low land. Such land, if drained, will give great crops of hay, and this fed out on the farm will make manure for the upland. We have no crops that we can raise to sell that will injure the land less or pay better than wheat, barley, and clover seed. The clover hay, and the corn and fodder will, of course, be fed out to stock in winter. This rotation may be easily varied without throwing it out of gear. For instance, you might plant potatoes instead of corn, and follow with barley just the same. But as the potatoes are sold, the enriching effect of the rotation would be weakened. They are, however, usually a profitable crop, and if we used more artificial manures, the land could be kept in heart equally well. I know of no ordinary farm crop to which a good artificial manure can be applied with as much profit as potatoes. The reason of this is not that the manure benefits potatoes more than other crops, but simply that we get a better price for potatoes than we do for ordinary grain crops. For instance: An average crop of wheat without manure, would be about 15 bushels per acre; and an average crop of potatoes 100 bushels. Now a manure that would add one-half to the wheat would also add, probably, one-half to the potatoes. In other words, it would give an increase of $7\frac{1}{2}$ bushels of wheat on the one hand and 50 bushels of potatoes on the other. The wheat at \$2.00 a bushel, would be worth \$15, while the potatoes at 50c. a bushel, would be worth \$25. And in this section wheat is much more frequently below \$2.00 than potatoes are below 50c.—on the farm. I say "on the farm," because the labor of storing and marketing potatoes is considerable.

The Deacon always shakes his head when I talk about artificial manures. "You have raised one good crop," he said the other day, "but we shall see." He alluded to my wheat. I have not yet thrashed, and of course cannot tell how it will turn out, but as the pomologists say of a new fruit, "it promises well." If I could buy Peruvian guano containing 16 per cent. of ammonia, and 25 per cent. of phosphates, for \$90 per ton, I would put 300 lbs. on every acre of my wheat this fall. By the time

it was on the land this would cost say \$15 per acre. In England, 5 lbs. of ammonia give an extra bushel of wheat. According to this rule, 300 lbs. of such guano would give an extra yield of about 10 bushels per acre. If we got \$1.50 a bushel, the account would just balance. But we should get a greater growth of clover the following year. And even if all the guano is used up by the wheat and clover, the extra growth of clover roots would serve to enrich the land, and this with the extra crop of clover hay and seed would afford a profit—"not gorgeous," as the author of "My Farm of Edgewood" says, but still a profit.

I see that the editors of the *Agriculturist* ask its readers in different sections of the country to inform them of the price of manure. This is a good idea. I think it will astonish those who have thought little on the subject to find how much it costs to manure an acre of land. I was talking to a farmer who draws considerable manure from the city, and he told me that he believed it cost him \$100 an acre. He does not raise ordinary farm crops. If he did I do not believe it would pay. As a general rule, the more labor a crop requires to grow it, the more profitable will manure prove. That is awkwardly expressed, but you get the idea? This is the reason why market gardeners, seed growers, and nurserymen can afford to pay so much for manure. If they can double the crop without increasing the labor, they can well afford to pay a high price for manure, for the price of the product is usually in proportion to the labor and skill required to produce it.

The Doctor says he sowed oats this spring on land that was plowed last fall, and simply harrowed in the spring without another plowing, and he raised a splendid crop. He thinks harrowing is better than cultivating, as oats, like wheat, seem to prefer a firm soil.

Last spring I drilled in some of my barley, and sowed the other broadcast. We are cutting it to-day (July 28), and Dutch Peter, who was cradling round the field to make a path for the reaper, remarked, "You sowed the barley with a machine?" "Yes," I said, "Part with a machine and part by hand." I showed him the place where the drilled barley ended, and remarked that the broadcast seemed the best. "Ten times better than the machine," he said. This was a slight exaggeration! Peter, of course, is prejudiced against all machines. But it would seem to be a fact in this case that the broadcast barley was the best. Still it is so much more convenient to sow with a drill—you never have to stop on account of a high wind—that we cannot afford to be without one.

Speaking of the prejudice against machines, I heard one of my men tell Jacob, who drives my reaper, that if we had another man who could cradle as fast as he could, they could cut more wheat in a day than he could with a machine. This was in the morning, before we commenced to reap. I told Jacob not to mind their taunts, but to drive steady. The horses were disposed to be a little frightened at the reel. But I knew all the bolts were tight and everything snug, and that there was not much danger of breaking one of Wood's best reapers. "Keep 'em straight Jake, and let 'em go"—and away they went round the field as fast as they could walk, and sometimes a little faster. But the machine stood it. The wheat was pretty heavy, and there was no need to put

the break on the self-raker. The sheaves came off thick and fast, and the five men who were binding, were soon left behind and I had to put on another hand, and even then they thought they had to work hard. Now, we ask the opponents of machines, where are the two cradlers that can keep six men busy to bind after them?

Topping Corn and Corn Fodder.

We are in little danger of over estimating the value of well-cured, or only tolerably well-cured, corn-fodder. As feed for milch cows it is hardly surpassed by very good upland hay, and has to encounter only one serious drawback, namely: it must be cut up fine, salted and wet up with a little meal, bran, or oil cake of some sort, in order to get the full benefit. The necessity of spending so much labor upon it detracts from its value, so that while in New England a farmer may perhaps afford to pay two-thirds what he would have to pay for hay, at the West, where fair hay may be had for the cutting and hauling, its value is less in proportion. Still, fed whole, it is highly relished by all kinds of stock, and constitutes the chief living of the young stock in winter over a large portion of the Northern States. At the West the great corn-fields, upon which the stalks are left standing after the ears are picked, afford winter feed, poor and weathered though it is, which helps many a herd through that might perish otherwise in the hard winters.

When the corn-stalks are very large, it is hardly worth while to attempt to cure the big butts and cut them up for fodder. There is probably a small gain in the weight of the grain, if after the kernels glaze well the corn be cut up at the ground, rather than topped above the ears. Yet where the great dent corn is planted, we incline decidedly to the opinion that there is a decided advantage gained when it is topped, and the tops and suckers (earless side-stalks) are well cured.

The practice at the South of breaking out the suckers together with the lower leaves of the corn, while yet it is green and the ears not glazed, certainly affords a very excellent fodder, and if enough of the strong growing suckers, which would make good male flowers, be allowed to stand to fertilize the tips of the ears, it is probably economical. Where the small kinds of corn are grown as throughout Canada, New England, and New York, we regard it as poor policy and a loss of fodder to top corn for the sake of getting a kind of fodder which the cattle will eat up clean if not chaffed. With a little pains and labor, but a very small portion of the stalks are refused by the stock.

Dr. R., of Hartford Co., Conn., had a corn-stalk stack accidentally put up too green, (or perhaps, it got thoroughly rain-soaked,) so that it heated, and the interior came into a condition of very active fermentation. The result was, that he thought it mostly ruined, and as soon as he could, threw off the unhurt portions to save them, and thus opened what appeared to be a mass of corruption beneath. The butts were the only parts of the stalks which retained their form, all the rest was a brownish or black mass, smelling, however, not unpleasantly. The cows showed their preference at once by rejecting the sound stalks, and eating the others, the softened ones, with great gusto. The fermentation had proceeded just so far as to form the famous "brown hay," the stalks being soft, sweet and flavorful. The Doctor has, we believe, repeated the operation with success.



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ORNAMENTAL GROUP OF AQUATIC PLANTS. — Designed and Engraved for the American Agriculturist.

Aquatic Plants for Ornamental Ponds.

The term, Aquarium, has of late years been so exclusively applied to the glass tanks in which plants and animals are grown, that we forget there is an older, and quite as legitimate use of the word, viz., its application to ponds or enclosures of water in which aquatic plants are grown. A body of water, fed by springs or a living stream, is always desirable in grounds of moderate dimensions, while a mere pond, depending upon rains and drainage of the adjoining land, for a supply of water, is always a nuisance.

Those who possess a proper body of water, have the means of cultivating a number of aquatic and marsh plants that could not otherwise be grown. While some plants need a certain depth of water, others grow well if their roots are merely placed in the moist margins. Our artist has represented some of the more striking aquatic plants that may be employed for ornamenting bodies of water. In the centre of the picture we have the Water, or Pond-Lily, (*Nymphaea odorata*), which may deservedly rank as first in importance. The fine floating leaves, the pure white of its flowers, as well as their delicious perfume, make this the most desirable of water plants. This Lily has a large and fleshy root, as large round as a man's arm. It

grows in two or three feet of water, and is rather difficult to get up. When the root is obtained, sink it, by means of stones tied to it, and it will soon make itself at home. There is considerable difference in the size of the flowers, and some of them have a pinkish color. The Yellow Water-Lily, (*Nuphar advena*), is less elegant, but may be introduced to make up a variety. The tall aquatic on the left hand of the picture is our largest wild flower. It is the Yellow Nelumbo, or Water Chinquapin, (*Nelumbium luteum*). The leaves are often two feet or more across, and the pale yellow flowers, which are six or eight inches in diameter, are succeeded by a peculiar top-shaped fruit. This plant grows at Lyme, Conn., at Philadelphia, Penn., at Big Sodus Bay, Lake Ontario, and in the waters of the Western and Southern States. It bears tubers from which it can doubtless be propagated. Our native *Calla palustris*, much like the green-house Calla, but smaller, may be introduced in shallow water. This is shown in the engraving in the foreground on the right of the centre. To the right of this is the Arrow-head, (*Sagittaria variabilis*), of which the arrow-shaped leaves present a great variety of forms. Another common plant, with an arrow-shaped leaf, and a spike of purple flowers, not shown in the engraving, is the Pickerel-weed, (*Pontederia cordata*), and is found in almost every pond.

The banks of such a piece of water afford an admirable locality for the curious Pitcher Plant, figured in May last, as well as for the brilliant Cardinal Flower, (*Lobelia Cardinalis*), and many others. Nor should the less showy but curious aquatics be forgotten in planting. The common Cat-tail, (*Typha latifolia*); the Reed, (*Phragmites communis*); the Wild Rice, (*Zizania aquatica*), should not be omitted. Indeed, our own waters furnish enough species, which, judiciously planted, will produce a pleasing effect. We have noticed only some of the most conspicuous of our native water plants. Any one can, with a little care, transfer to his pond the attractive plants he finds in his rambles, and there are besides a number of exotics worth growing.

THE HOLLYHOCK AS A BOUQUET-FLOWER.—We are so accustomed to see the Hollyhock used as a stately ornamental plant that it is one of the last that we would think of using in a bouquet. Yet after the abundance of roses is over, Hollyhocks go largely to make up the showy bouquets sold by the flower-girls in the streets of New York. The improved varieties are very double and neat in form, the texture of their petals is delicate, and they present a great variety in color, from pure white to almost black. Some of the shades of straw and

rose colors are as fine as need be. When these flowers are used in a bouquet, they are placed singly, on artificial stems. The outer, or "ray petals," as florists term them, are removed, an operation which leaves the flower in such an altered condition that it would not at first sight be recognized as a Hollyhock. With plenty of lively green, and here and there a Tuberosa, or bit of Heliotrope to give fragrance, they produce a most pleasing effect, and have a delicacy and brilliancy which one would hardly suppose the Hollyhock capable of showing.

Packing Grapes for Market.

Scarcely any fruit depends more for its price upon the way it is packed than do grapes. They are so easily knocked from the stem, and the berries so readily broken, that it is not practicable to transport them for a long distance in large packages. The favorite package in the New York market, is a box holding five pounds. Ten pound boxes also come, but have a less ready sale. The boxes have light top, bottom and sides, and strong ends, and are made in the grape regions at a very cheap rate. The grapes are packed with the top nailed on the box, and the bottom removed. Some growers put a piece of paper in the box before putting in the fruit, but this is not essential. First, a layer of fine bunches is put in, then smaller bunches, until the box is full. The bottom of the box is then nailed on, taking care to have the berries packed as closely as possible without crushing them. When the fruit is to be kept for some time, the boxes are filled a little heaping, and allowed to stand for several days before closing. During this time the fruit shrinks somewhat, and the skin becomes tougher, so that the bottom can be put on with considerable pressure. All grapes should be picked when perfectly dry, and those that are to be retained for a later market should be kept as cool as possible.

The Philadelphia Raspberry.

The original plant of this Raspberry was found growing wild near Philadelphia some twenty odd years ago, and is probably a marked variety of our common red species, *Rubus strigosus*. Though it has been so long in cultivation it has not been extensively grown out of Southern New Jersey. We give an engraving of a fruit cluster, from Fuller's Small Fruit Culturist, now in preparation. It will be seen that the fruit is only of medium size; it is of a dark, or purplish red color, firm, and of fair quality. Those who take Brinckle's Orange or even the Fastolf as their standard of quality, will not rank the Philadelphia as first class. Still, upon the light soils of New Jersey it is much more valuable than the finer varieties, and possesses qualities which make it the leading market variety and one of the most profitable fruits of that section. In a market fruit, productiveness is of the first importance, and this the Philadelphia has in a high degree. We regarded the stories told of

its productiveness as extravagant until we saw the plants in bearing. It is stated, upon good authority, to yield over 200 bushels to the acre. It is perfectly hardy, and requires no laying down, and has so sturdy a habit of growth as to require no stakes. The plant does not sucker very freely—a desirable quality in some respects, but one which prevents its multiplying as rapidly as may be desired by those who sell plants. Upon the whole we are greatly pleased with all we have seen of this berry, and shall be glad to hear that it has proved itself as valuable elsewhere as it is in the vicinity of Philadelphia. We believe in having a high standard of quality in all fruits; we also believe in having fruit in plenty, and if we cannot get an abundance of the best, let us have the best we can get. The Philadelphia



PHILADELPHIA RASPBERRY.

is among Raspberries, what the Concord is among grapes, not a fruit of the highest known excellence, but a sure and abundant bearer.

Since the above was in type, we notice a report in the Northwestern Farmer that this variety has given good results in Indiana. Mr. A. Furnas says: "The Philadelphia has fruited twice with me, and thus far, has been apparently as full of fruit as it could hold. Indeed, the canes were weighed down with their load of fruit. This raspberry has proved to be entirely hardy thus far. The berry is of a pale red color, quite firm, with what some pronounce a slight touch of the pumpkin flavor, which with some amounts to an objection, while with most its quality is much admired. This is a late variety, just coming in as Doolittle is going out, and thus lengthening the season of this wholesome and delicious fruit."

Monthly Roses—How to Preserve During Winter.

BY PETER HENDERSON, SOUTH BERGEN, N. J.

The question is asked me many hundred times every season, "What kind of Roses shall I plant?" I invariably recommend the "Monthly," rather than the so-called "Perpetual" varieties, which, with very few exceptions, sustain their "Perpetual" character by only once flowering freely, in June, with occasionally a few scattering flowers throughout the summer and fall. While with the monthly varieties, we have not only a monthly, but an almost daily supply of flowers, embracing far more variety of

color, from June till November. There is no plant sold which, for the first season at least, is so unsatisfactory to the buyer as the Perpetual



Fig. 1.

Rose; the purchaser, in good faith believes that its name indicates a perpetual flowering character, and is woefully disappointed to find that the flowers or flower buds that are on it when purchased, are nearly the last that are seen on it for that season. True, its entirely hardy nature, sustaining it unscathed through the winter, compensates for the first year's disappointment by a gorgeous bloom in June, but this is all; for the remainder of the season there is little ornamental about it. While on the other hand, the Monthly Rose, the original types of which are natives of China, are evergreen and ever-blooming, if not arrested by severe frosts,—for in the milder latitudes of our Southern States, they grow and bloom without cessation the entire season, unless perhaps for a month or two in extremely dry and hot weather in summer. But now comes the question, are these monthly roses hardy in our Northern States? They are certainly not so by ordinary treatment, but my object in writing this paper is to explain a very simple process by which they can be preserved in as good condition during winter as the hardest Perpetual or Prairie Rose. The success of the plan, however, depends greatly on the condition of the soil in which they are growing. If it is naturally dry, having a gravelly or sandy subsoil, it is certain to succeed; but if wet and undrained, they cannot be saved by this or any other process. The operation is to remove three or four inches of soil from one side of the plant close up to the roots, and of length and width proportioned to the size of the bush, as represented by figure 1. The plant is next bent



Fig. 2.

down into the excavation, and held in place by a few pegs, as shown in figure 2. It is next covered entirely, root and branches, by soda, placed grassy side upwards, and presents when finished, a little hillock in appearance like figure 3.

There is one very important condition to success, which is: the time at which it is done. Few of our rose amateurs have any idea of the amount of freezing that the most tender Tea Rose even, will sustain without injury, and would in consequence be apt to hurry to put them under their winter covering on the appearance of the first slight frost in October. This would most certainly prove fatal to the Rose by causing it to rot during the still warm autumn weather. We usually have frost in this part of the country to injure most green-house plants that are exposed in October.

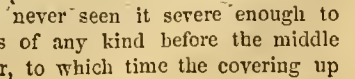


Fig. 3.

Yet I have never seen it severe enough to injure Roses of any kind before the middle of December, to which time the covering up

should be delayed. Covering the ground, however, around the bushes with three or four inches of straw or leaves, to prevent the earth from being frozen, should be done a month earlier; this little precaution will allow of excavation at the time of covering with the sod. The time here given for the operation (the middle of December) is that best suited for the latitude of New York; sections to the North or South must be varied accordingly. Perhaps the best rule that can be given is, to delay the operation until the ground can no longer be plowed or dug with the spade. The covering of sod may be removed as soon as vegetation fairly starts in spring—for this section, say the middle of April—the plants raised to the upright position and closely pruned. It will be understood that in the process of bending down, the roots are only disturbed slightly on the side that has been excavated, consequently they have nearly the full vigor of an undisturbed root, and the plants will grow in a way that will amply repay the little trouble given them. Every plant saved over in this way has a value four-fold of anything that can be planted in spring, for the obvious reason that it has not had its roots disturbed by removal. This plan is a great improvement on that sometimes practised of digging them up and burying them in the fall, to be unearthed and again replanted in spring, for this cannot be done without mutilation of the root, and consequently diminished growth the next season. Plants of different kinds vary much in their ability to recuperate, after planting, and few suffer more than the Rose, hence the necessity of practising the method recommended, in preference to that of digging them up. But a still worse plan is, for amateurs in gardening to lift their Rose plants and pot them in fall, and attempt to keep them in the house or cellar in winter; in nine cases out of ten they never live to spring, and if they do, only linger on a miserable and diseased existence. Roses are often expensive, and always valued plants, and we can well imagine how natural it is on the approach of cold weather to lift and pot them, and place them in the window of a warm sitting room or parlor; but this kindness is killing to them, for they are not a kind of plant that desires heat at this season, or in this condition of their growth. It is still more delusive to think that they can be lifted from the ground in fall and potted so that they will bloom during winter; perhaps by such treatment as can be given in a cool greenhouse or frame, they may be got to bloom by February or March, but they should never be forced into bloom earlier, unless they have been grown in pots during the summer previous.

Striking Cuttings in Sand.

A correspondent writes: "In the June *Agriculturist*, (p. 297,) you gave a process of rooting cuttings in sand as practised by Mr. Henderson and others with success. The following plan, which I adopted some years since, answers the purpose in a small way. I had some tin basins made in the following manner: three inches in depth, ten inches in diameter at the bottom, and eight inches at the top. These were painted black and varnished, filled with fine sand, and kept constantly wet. The cuttings were from three to four inches in length, and placed in the sand about half an inch apart. They were placed in a sheltered spot where the sun could shine on them all day. At night they were removed to the house. The sides being

sloping and black, the sun acted with powerful effect upon them, and kept the sand quite warm, and I found that I could grow anything which could be grown from a cutting in any propagating house. They were very useful, simple, and cheap."

Insects and Plant Fertilization.

FOURTH ARTICLE.

We described in our last article the ways in which insects are made to fertilize two or three of our wild Orchids, taken as specimens of the whole tribe. Orchids exhibit the greatest diversities and the strangest forms in tropical countries, and the contrivances by which some of these are fertilized are, if possible, still more wonderful than those which we have attempted to describe. Take, for example, the case of *Coryanthes*, a large-flowered Orchid of Trinidad. We can not describe it more briefly and graphically than in the following abstract by Mr. Darwin:



Fig. 1.—A flower of *Kalmia latifolia*; the stamens of which are out of their sockets, having done their work.

"This Orchid has its labellum or lower lip hollowed out into a great bucket, into which drops of almost pure water, not nectar, continually fall from two secreting horns which stand above it; and when the bucket is half full, the water overflows by a spout on one side. The basal part of the labellum curves over the bucket, and is itself hollowed out into a sort of chamber with two lateral entrances, within which and outside there are some curious fleshy ridges. The most ingenious man, if he had not witnessed what takes place, could never have imagined what purpose all these parts served. But Dr. Crüger saw crowds of large humble-bees visiting the gigantic flowers of this Orchid in the early morning, and they came, not to suck nectar, but to gnaw off the ridges above the bucket; in doing this they frequently pushed each other into the bucket, and thus their wings were wetted, so that they could not fly out, but had to crawl out through the passage formed by the spout or overflow. Dr. Crüger has seen a 'continual procession' of bees thus crawling out of their involuntary bath. The passage is narrow, and is roofed over by the column, so that a bee, in forcing its way out, first rubs its back against the viscid stigma, and then against the viscid glands of the pollen-masses. The pollen masses are thus glued to the back of the bee which first happened to crawl through the passage of a lately expanded flower, and are thus carried away. Dr. Crüger sent me a flower in spirits of wine, with a bee which he had killed before it had quite crawled out of the passage with a pollen-mass fastened to its back. When the bee thus provided, flies to another flower, or to the same flower a second time, and is pushed by its comrades into the bucket and then crawls out by the passage, the pollen-mass necessarily comes first into contact with the viscid stigma, and adheres to it, and the flower is fertilized. Now at last we see the full use of the water-secreting horns, of the bucket with its spout, and of the shape of every part of the flower."

Fact is here stranger than fancy; for no one

would have beforehand imagined such an arrangement. *Catasetum*, another large-flowered Orchid of the same region, is equally visited by bees, for the purpose of feeding on the substance of the labellum or sac of the flower. "In doing this they inevitably touch a long, tapering, sensitive projection, or, as I have called it, antenna. The antenna being touched, causes a certain membrane to rupture through its own irritability, and this sets free a spring by which the pollen-mass is shot forth, like an arrow, in the right direction, and adheres by its viscid extremity to the back of the bee. The pollen-mass is thus carried to another flower, where it is brought into contact with the stigma, which is viscid enough to break certain elastic threads, and to retain the pollen-mass which then performs its office of fertilization."

This brings to mind the flower of Barberry. Every one knows that the six stamens around the pistil stand, bent a little backwards, one under each of the over-arching petals; and that when the base of the filament is touched on the inner side, it starts forward by a sudden movement of irritation. With our vision now enlightened we can see the use of this to the plant. The anther opens, in an unusual way, by a sort of trap door, one on each side, hinged at the top; these doors when the blossom is open stand ajar, or are at length uplifted; so that when the stamen springs forward at a touch, the pollen rattles out into the bottom of the flower. Now as the flowers are visited by small winged insects which seek for nectar at the bottom of the flower, we may be confident they will touch the sensitive base of the filaments, and consequently get powdered with some of the discharged pollen; they will carry this pollen to the next flower they visit, and as they enter it they can hardly fail to rub some of it on the button-shaped stigma. We have not watched the operation in the case of the Barberry, but we hope some of our readers will do so next year, and report the result. We have, however, admiringly seen the thing done in a somewhat similar way, although by a different mechanism, in the flowers of our common *Kalmia*, or American Laurel. Here, in all the species, there is an ingenious contrivance, in which elasticity is made to do the work which in the Barberry is done by a vital irritability.

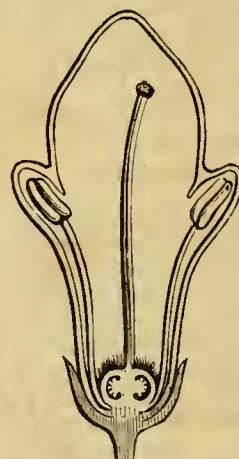


Fig. 2.—Section of a flower-bud of *Kalmia latifolia*.

Fig. 1, represents a flower of *Kalmia latifolia*, our larger *Kalmia*, with the 10 stamens spreading around the single style, which is tipped with a small stigma. These stamens are a little shorter than the style, and the saucer-shaped blossom stands upright. The pollen has no chance to fall upon the stigma. Besides, in this, as in most plants of the Heath Family, the pollen is not likely to fall out of the anther at all; for, instead of splitting open from top to bottom, in the common fashion, or opening by trap-doors, as in the Barberry, each of the two anther-cells here opens only by a little hole at the top. How then is the pollen to get out, and how is it ever to reach the stigma of the same, or of any other flower? Most people, who are accustomed to look at flowers, know that the corolla has 10 pouches or pockets, and that an anther is stuck into each. Fig. 2, is a section of

a flower-bud, cutting through two of these pockets, and showing the anthers enconced therein. Fig. 3 shows the half of a flower just expanding; and in so doing it has carried the anthers outwards and downwards, bending their filaments. When the flower is wide open the filaments are bent backwards still more, with considerable tension, like that of a bent bow. Pull the filament a little, or gently lift the anther with the point of a pin, so as to disengage it, and the bow straightens itself with considerable force, throwing the pollen out of the anther



Fig. 3.—One half of an opening flower of the same, showing 6 of the 10 anthers in their pouches.

with a momentum which carries it far over the stigma. In fact, this stamen is on the plan of, and acts like, a boy's pea-shooter, or rather like a double pea-shooter,—two quills upon one bit of whalebone. So the pollen is shot at the stigma; and out of ten shots some may hit the mark. But we may well believe this elaborate contrivance was not got up for such a purpose. On enclosing a truss of flowers in gauze, so as to keep off flying insects, we find that the anthers remain in their pouches till the flowers wither, or till the filaments lose their elasticity and become flabby. Evidently the anthers are to be set free by insects. Now bees and wasps visit the *Kalmia*-flowers abundantly, chiefly in early morning. A bee on the wing poises himself directly over the centre of the flower, and usually rotates around, his fore-legs hitting or even pulling at the filaments in succession, while his proboscis is searching the bottom of the flower on every side; and the anthers, one after another, discharge their pollen upon the bee's chest and abdomen, the very parts of the body which, during the operation, are continually rubbing against the stigma.

We ought next to describe the curious flowers of the common Milkweed, in which the pollen coheres to form a waxy mass, and these masses are connected in pairs to a sticky gland; much as in the *Orchis* family, otherwise very different; and these glands, with the pollen attached, stick to the legs of bees and butterflies, by which they are conveyed from flower to flower. But we have not room for the description and for the figures which would be needed to make the account intelligible.

There is no need, however, to restrict our view to flowers of extraordinary structure, such as *Orchids* or *Kalmias*, or endowed with extraordinary irritability, like the *Barberry*-blossom. Most of our common brightly colored blossoms, and many that are not at all showy, plainly reveal on inspection their adaptation to cross fertilization by the aid of insects. Look into the corolla of a *Foxglove*, and see the four an-

thers and the two-lobed stigma pressed against the upper side of the tube, about half way down; but, the style being a little longer than the filaments, the stigma projects beyond the anthers. As the flower hangs mouth downwards, it might be supposed that the pollen would fall on the stigma; but, the stigma facing forward, so as to prevent that, the pollen must fall useless to the ground. Now the flowers are much visited by bees; and it is interesting to see either a humble-bee or a honey-bee crawl into the flower: alighting on the projecting border or lip on the lower side, he turns over so as to face the stamens and stigma, catches hold of the curving filaments to aid in the ascent, and works his way upwards until the proboscis reaches the nectar at the very bottom of the flower. In so doing he brushes his chest and belly, first against the stigma, bringing to it the pollen from the previously visited blossom, and then against the anthers, thus receiving a charge of pollen for the next flower.

We need not multiply examples. Every garden and every field offers equally good examples,—lessons which anybody may read and understand, if he will only open his eyes, and be convinced that the familiar ditty of our childhood has a more extended application than the good old Dr. Watts ever dreamed of. When the "Hymns for Infant Minds" are brought up to the present state of science, we shall read:

"How doth the little busy bee
Improve each shining hour
By carrying pollen day by day
To fertilize each flower,"

and the lesson of disinterestedness will carry a worthier moral than the praise of selfish accumulation.

A. G.

Dutch Bulbs.

The superiority of hyacinths and tulips as grown in Holland, over these raised in this country, has been so long insisted on that there must be some truth in it. All gardeners who have bought fresh imported bulbs know that for the first year they are very fine, the next year less so, and so on for a succession of years. At least, it requires extraordinary skill to keep up their original excellence. Perhaps our hot and dry summers, with our stimulating manures, has something to do with this deterioration; but we can not believe that good bulbs are an impossibility here, if we attend carefully to the condition of the soil. A writer in the *Gardener's Chronicle* gives us an account of the nature of the soil in which the best Dutch bulbs are grown. The land about Haerlem is composed chiefly of sand and decaying shells, combined with considerable vegetable matter. This is dressed every year with a liberal supply of cow-dung, and nothing else. Where bulbs are to be grown, the land is trenched two feet deep and heavily dunged. The ground is not yet ready for hyacinths: the manure when first applied is too rank for the healthy culture of such roots. Accordingly, the ground is devoted the first year, to some hoed crop, such as potatoes; after these are harvested, the ground is again plowed and harrowed smooth; and then, say in October, the bulbs are put in. They are set about 4 inches deep, and when frosty nights set in, the ground is covered with reeds, 4 or 5 inches thick. So managed, the bulbs form strong rootlets before winter, and in spring shoot up vigorously.—It is added that great pains are taken during the summer to ensure a healthy growth of leaves. As soon as the flowers fade, and even before, the flower stalks are cut off,

both to strengthen the roots and to prevent these stalks falling down and bruising the leaves. Perhaps we in this country mistake by cutting off the leaves before they are fully ripe. At any rate, the foregoing are the Dutch facts; let us speculate upon them and profit by them.

The Wine Question.

Grapes will, in many localities, be ripe this month, and it will be expected that we shall say something about wine making. To those who intend to make any considerable quantities of wine, we cannot do any better service than to commend to them Mr. Husmann's excellent treatise on *Grapes and Wine*. In October, 1864, we gave the process as followed in a small way, and we very briefly recapitulate it. Let the grapes be thoroughly ripe, pick out all decayed ones, and grind them in a mill that will not crush the seeds, or pound them in a barrel. The pulp is allowed to stand from one to three days, according to the desired quality of the wine. The longer it stands the more color and astringency it will acquire; for light wines, one day is enough. The juice is then to be pressed from the pulp and put into a perfectly clean cask to ferment. The cask being filled, it is closed by a bung, which has fixed in it a tin or glass tube bent into the form of a siphon, or twice at right angles. The open end of this tube dips under the surface of water in a cup or other vessel, and allows the gas produced during fermentation to escape, while it completely excludes air from the contents of the cask. When active fermentation has ceased, the cask is bunged tightly, and left for two or three months, or until the wine becomes clear. The wine is then carefully racked off from the lees and transferred to a clean cask. Usually another, but less violent, fermentation sets in the following spring, and after this is over the wine may be bottled. This is a rough outline of the process, which should in every part be conducted with the greatest care and cleanliness, using no casks or other vessels that can impart any flavor to the wine. This is the process of the best makers, to produce wine from the fermented juice of the grape, without any addition. We headed this article the "wine question," as there is a question that has been discussed by our western vintners, with more or less acrimony on both sides. One side holds that wine should be the fermented natural juice of the grape and nothing else. The other side maintains, that in some seasons the grape does not contain sufficient sugar to make wine, while it has all the necessary acids and other constituents. They have a process of testing—which it would take too long to describe here—by which the amount of both acids and sugar is ascertained, and when there is a deficiency of sugar they add enough to make up the quantity to that of normal must. This is the case stated in brief, and the question, whether this is a proper procedure, is one which is likely to make still more discussion among wine makers. There are good arguments for both sides, and we are not yet prepared to express an opinion, except so far as to say that the claim that grape sugar makes wine, and that cane sugar makes rum—has no foundation in fact. Perfectly pure cane sugar, and pure grape sugar in fermentation will yield alcohol precisely the same, and it is only the associated matters that make wine of one and rum of the other. We know that it is not safe to advocate the doctoring of wines in any way, as in bad kinds it is liable to abuse.



Fig. 4.—One of the stamens, more enlarged.

We know, on the other hand, that our people are paying large sums for imported and California wines that have been treated in this very way, and even worse, as some of the so-called California wines are vile compounds, fortified with brandy. As it is likely that we shall be a wine-making people to a considerable extent, it is important that we come to some understanding upon this matter, and if only the product of unsugared grape juice is to be considered wine between the Atlantic and the Rocky mountains, let us have it so arranged that wines made otherwise elsewhere shall not be allowed to be sold.

A Fine Columbine.—(*Aquilegia glandulosa*.)

With the increased attention now given to hardy herbaceous perennials, we are glad to see that the Columbines are not overlooked. The old garden Columbine, *Aquilegia vulgaris*, sports into a great variety, and a bed of this, in its different colored double flowers, is very beautiful. But there are other species which are to our taste more pleasing than *A. vulgaris*; they are not double, it is true, nor is it necessary that every flower should be double; there are some, the grace and simplicity of which would be spoiled by any multiplication of parts. Our common wild Columbine, *A. Canadensis*, which was figured in May 1865, is much valued in European collections, and should be seen in our own gardens oftener than it is. When introduced into the border it takes on a vigorous growth, flowers profusely, and seems to do its best to repay the attention of the cultivator.

We recently saw in the grounds of Mr. Henderson, at South Bergen, among other choice herbaceous plants, a Columbine, *Aquilegia glandulosa*, which seemed such a gem that we had an engraving made of one of the smaller specimens. The finely cut foliage makes a tuft close to the ground, and the stems are a foot or less high, bearing very large flowers. The calyx and horns of the petals are of a most pleasing blue color, while the upper portion of the petals are of a pure white, the two making a striking and charming contrast. The species is hardy with Mr. H., but Mr. Breck says that he lost his; the plant being a native of Siberia, any want of hardiness is probably due rather to changes of temperature than to excessive cold.

Hedges and Hedge Plants.—1st Article.

THE HONEY LOCUST.

That hedges form the most available enclosures in many places, and the most beautiful in all, is generally conceded. Where there is a great abundance of timber, or where the land abounds in stones, these materials are not likely to be superseded by the live fence. In ornamental grounds, they form the most appropriate enclosures, but in small gardens they often occu-

py more ground than is desirable. Whoever sets a hedge, for whatever purpose, must make up his mind to take care of it. A neglected hedge is as ugly as a well kept one is beautiful. Nothing gives a place a more dilapidated appearance than a hedge, as we often see it, a mass of foliage propped up on long and naked sticks. To have a perfect hedge, it must be begun in the

native of Illinois, Pennsylvania, and southward, but is hardy all through New York State. It forms a fine large ornamental tree, with light feathery foliage, and has numerous sharp thorns which often become very large and branching. The flowers are in small clusters and not showy; but the pods which succeed them are long, flat, and wavy, and contain

brown seeds, of the size of a large bean, imbedded in a sweet pulp. One of the objections that have been proposed to the use of this as a hedge plant is, that in its natural state it is a large tree. This objection will equally apply to the thorn, which we have seen twenty or thirty feet high. That a tree left to itself will attain a large size is no proof that it cannot be dwarfed by cutting, and its habit completely altered. The best specimens of a Honey Locust hedge within our knowledge are to be seen at the nurseries of David D. Buchanan, at Elizabeth, N. J. These hedges were set about 20 years ago by William Reed, the then proprietor, and are well worth a visit by those who would like to see a perfect hedge. The plants in these hedges are set at a distance of about six inches. This is much nearer than has been advised. Warder, in his work on hedges, suggests three feet, which would appear too far. Probably a foot would be found a better distance than either. At any rate, these old hedges show no signs of decay from overcrowding, are furnished with branches quite to the bottom, and present a barrier impassable to man or beast. The seeds are to be bought of the seedsmen, or may be collected this autumn. If kept in earth through the winter they will germinate without difficulty, but if they have been kept dry they will need to be scalded before planting. Sow in drills as soon as the ground is warm, and keep clean and well cultivated through the season. The seedling plants are perfectly hardy, and unlike the Osage Orange, stand the winter without protection. In the spring the hedge is set, first shortening

the plants to about three inches. Plants suitable for setting can be purchased at the nurseries.

The Golden Dwarf Peach.

This is a comparatively new variety of peach that is a natural dwarf, growing only four or five feet high. The trees we have seen have a remarkably compact habit, and very healthy foliage. We have not seen the ripe fruit, but have seen it when nearly full grown. It is of fair size, and terminated at the end opposite the stem by a very distinct point. We saw fruiting trees in the orchard house of Mr. Isaac Pullen, of Hightstown, N. J., who is disposed to think well of the variety. Aside from the curiosity of the thing, this variety has an economical importance, if it proves to be all that is claimed for it. Peaches have of late years been such a precarious crop, as to discourage their cultiva-



AQUILEGIA GLANDULOSA.

right way, and when well established, kept in the proper form by regular clipping. Leaving the matter of setting and forming a hedge to another article, we wish to call attention to some of the suitable hedge plants. In the matter of hedges, as in other agricultural and horticultural affairs, the early attempts in this country were close copies of European practice, without taking into account differences in climate. The universal Thorn of England is a general failure with us, and so with the Privet and other plants. It was only when attention was turned to our native shrubs that we made any progress in hedging. Among the plants that have had a varying reputation as hedge plants, is our Honey Locust, which has now been sufficiently tested to confirm all that has been claimed for it, and in many localities it may be regarded as our most valuable plant. The Honey Locust, often called Threethorned Acacia, (*Gleditschia triacanthos*) is a

tion in most places. The Golden Dwarf may prove to be the founder of a race of peaches of such humble stature, that they may be protected as easily as raspberry bushes, and thus allow peaches to be raised in localities where it is not now practicable. It is well known that the peach is more nearly reproduced from seed, than any other of our cultivated fruits. It would be interesting to know if this dwarf habit is inherited by any of the seedlings of this variety.

THE HOUSEHOLD.



Something About Indigo.

It is well known that linen and other white fabrics will not be perfectly white, no matter how thoroughly they may be washed. They acquire a yellowish tinge which is counteracted by diffusing a small quantity of indigo through the rinsing water. This is about the only common domestic use of indigo, and though the amount consumed in each household is small, it in the aggregate amounts to a large sum annually. Indigo is a remarkable product, usually obtained from species of *Indigofera*, shrubby plants of the Pea Family.

The engraving shows the general aspect of the plant, which grows from three to six feet high, and has compound leaves much like those of the locust tree. The flowers are small, blue, and have the general shape of the pea blossom; they are followed by a small pod. The plant is cultivated in various warm countries, especially in the East Indies. The foliage of the indigo plant is green, and no one would suspect it capable of yielding such a dark blue coloring matter. Indeed indigo, as such, does not exist in the plant, but is contained in juices in a colorless and soluble form. To obtain indigo, the plants are steeped in water, and the liquid, or tea thus obtained run off into vats where it is stirred and beaten with rods for the purpose of bringing the air freely in contact with the liquid. By this treatment, the oxygen of the air combines with the colorless and soluble matter, and converts it into blue and insoluble indigo, which is allowed to settle, and is then made into cakes. The product of different countries varies considerably in hardness and intensity of color, but all of it when rubbed by any hard substance, such as the finger-nail, takes on a peculiar metallic luster. Indigo is soluble in strong oil of vitriol, and in this condition it is the "sulphate of indigo," or liquid blue of the

druggist and dyer. In the common way of dyeing with indigo, it is first changed from its blue and insoluble state. There are several substances that effect this change; a mixture of lime and copperas is often used in setting the vat. Fabrics immersed in this solution of colorless indigo and then exposed to the air become dyed by the change of the indigo, back to its blue condition. It has been found that turnips contain a principle (pectine) which converts indigo into the soluble form, and in France, turnips are largely used by the dyers.

Remember

1st.—That before food can be of any benefit to the body, it must be dissolved in the stomach, so that it can be absorbed into the blood in a liquid state, and be thus carried to the parts of the body needing to be nourished or strengthened, or renewed by it. *Remember*

2nd.—That the human stomach is not like the gizzard of a fowl—a hard, tough membrane, filled with gravel-stones, to break or grind up the food—but that it is a soft bag, so to speak, which merely holds the food and shakes it about, so that the gastric juice can better dissolve and work it into a liquid state; therefore, *Remember*

3d.—That nothing should go into the stomach which has not first been masticated (chewed) *very fine*, or cut or mashed fine before it is taken into the mouth, so that it can be easily dissolved. Lumps of potato, or of fruit not well ripened and mellow, pieces of meat as large as chestnuts, lumps of dough or new bread, small fruits with skin unbroken, etc., etc.—anything that will be slowly dissolved—causes an uneasy feeling, and often irritates and inflames the stomach itself. Further, if they are not fully dissolved, these things pass down through the whole twenty-five feet or more of the alimentary canal, causing pain, colic, diarrhoea, and often dysentery. *Remember*

4th.—That the saliva of the mouth mixed with the food, greatly aids the dissolving or digestion of the food in the stomach, and that even soft food should be chewed or worked over in the mouth, until well mixed with saliva. *Remember*

5th.—That children can not appreciate the importance of masticating food, and that great care should be taken, either to see that they do masticate it well, or that it be so thoroughly prepared for them that it can not go into the stomach in an undigestible form. Proper care in this single thing would save the lives of half the children that now die young, and a very large proportion of all "pains under the apron," the diarrhoeas, and bowel complaints, that children, and grown people as well, suffer. *Remember*

6th.—That, as all food after going into the stomach must either be properly digested, or produce injurious results, it is the height of folly to crowd down into the stomach two or three quarts of food and drink, and expect that organ to work it all up readily. Suppose that for every article you eat at a meal, you put, or imagine you put, precisely a similar amount into a dish—the meat, bread, potatoes, vegetables, tea, coffee, or water, and the pie or pudding—what a mixture you would have both in kind and bulk; yet that is what is given the stomach to dissolve, or try to dissolve. *Remember*

7th.—That the stomach keeps at work while it has any undissolved food in it, and that if you "hunch" or "piece" between meals you give that organ no time to rest, and it will in time be weakened if it do not give out. *Remember*

8th.—That sleep is far more quiet and refreshing, if the stomach sleeps with the rest of the body, and that it is better to eat nothing which can not be digested before retiring to rest. Children, who retire early, or ought to, should have only light suppers of simple, digestible food.

Cheap Sponge Cake.—1 cup sugar, 1 cup flour, 3 eggs, 1 teaspoonful cream tartar, $\frac{1}{2}$ do. of soda dissolved in a little milk. Mix all together and bake 20 minutes in a quick oven.—*A Friend.*

Original Contributions to the American Agriculturist.

"Information Given."—(See page 294.)

No. 9.—**HOME-MADE INK.**—(d) The kind I use altogether, and it is better than any I can buy, is made by boiling maple bark in water for sometime, then straining it off through a cloth and boiling down until thick enough for use. To make it black enough, I add a little pulverized copperas (sulphate of iron).—*Isaac H. Page, Ottumwa, Iowa.* [Mr. Page's letter is certainly written with good ink.—Ed.]... (e) Into one gallon of soft water put 2 ounces extract of logwood; boil ten minutes, and then add 24 grains bi-chromate of potash, and 12 grains of prussiate of potash, stirring a few minutes while over the fire. The ingredients cost 25 to 30 cents. I have used it exclusively for 4 years.—*P. O. E., of Schodack.*—[The ink appears well on the letter. Would not some gum arabic improve it?... In a prescription from Foxboro, one of the figures is blotted out.—Ed.]

No. 10.—**EXTRACTING WHEEL-GREASE, ETC.**—(d) I have cleaned wheel-grease from a nice silk thus: Laying the silk on a clean sheet folded to 8 thicknesses, I rubbed the greased part with a soft cloth dipped in lard, moving the silk to a new spot frequently. After a time the wheel-grease all went through, leaving only clean lard. This was then cleaned out in the same way, by rubbing it with some nice soap and alcohol, using a clean cloth to rub with, and frequently changing to a new spot on the under-lying sheet. The silk was then laid on a clean cloth, and rubbed dry with a soft cloth. A friend cleaned a white Canton Crape in this way, and you can not find the place where it was greased.—*S. M. Healy, Trempealeau, Mo.*

No. 15.—**TO REMOVE MILDEW FROM MUSLIN.**—(a) Put the muslin on an earthen platter and pour over it a strong soap suds, to which a teaspoonful of soda is added. Set it in a strong sunlight three or four days, or longer if needed, adding more suds to make up the evaporation, and turning once or twice a day to expose all parts of the fabric. I have used this with great success for a number of years.—*Mrs. S. J. Wood, North Madison, Ind.*... (b) Stir $\frac{1}{4}$ lb. chloride of lime in a gallon of cold water. After settling an hour, pour off the clear liquid, and soak the mildewed cotton or linen in it two hours; wash well and expose to the sun.—*Farmer's Daughter, Richmond, Ind.*

No. 18.—**OLD BRINE.**—Eight years' experience convinces me that old brine which has not soured, if taken in spring, or before hot weather, and well boiled and thoroughly skimmed, is as good as new, when cold.—*Z. P. L., Erie Co., Ohio.*

No. 20.—**HOME-MADE TOILET SOAP.**—Boil together 3 lbs. soda ash, 1 lb. unslaked lime, and 4 gallons of water. When hot, strain it, return to the kettle, add 6 lbs. clean grease; boil slowly but constantly three hours, and let it cool. Next day take off the hard soap from the top, and put it in a clean kettle, adding $\frac{1}{2}$ lb. borax, and any kind of perfumery you like; let it melt, stirring it well together, and pour into a wooden mould or box that has been previously well soaked in water. Let it remain 24 hours, and then cut it into any convenient or fancy shaped cakes desired. Dry these a day or two, taking care to bring in at night. When dry enough, pack away for use.—*Mrs. S. J. Wood.* [Meeting's adjourned, only.—Ed.]

No. 21.—**PREPARATION OF PICKLES.**—For 200 pickles of moderate size, take 2 gallons of cider vinegar, or enough to cover them, 1 ounce white cloves, 1 oz. allspice, 2 oz. mustard seed, 2 oz. alum, 6 oz. horse-radish, and $\frac{1}{2}$ pint salt. Put all together and heat in a brass or glazed kettle to near a boiling point, and pour it on the previously washed cucumbers; cover them with cabbage leaves and put on a weight to keep them down. If they do not look green enough in two or three weeks, pour off the vinegar, heat it, and return it. Heat it a third time if necessary to make the pickles green enough. To prevent a white scum on the vinegar, cover the

cabbage leaves with a flannel cloth. Pickles thus prepared, keep a year well.—*Writer's name unknown.*

No. 24.—LARD AND ROSIN.—Some 12 or 14 years ago, the late Prof. Olmstead, of Yale College, read a paper before the American Scientific Association, describing the great value of a mixture of lard and common rosin melted together, for covering metals liable to rust. Just lard enough is added to the rosin to make it soft or semi-fluid at common temperatures. This may be applied to any metal surface, and, if desirable, be wiped off nearly clean, yet the thin film left will prevent rusting or oxidation. It is cheap, and useful for all farm and household implements, as well as for the most delicate philosophical apparatus. The mixture can be kept, ready for use, for a long time. We do not remember the best proportions. Can any one give them? Almost any proportion not too soft, but that will be fluid enough to apply without heating, will answer the purpose.

No. 25.—TO KEEP SAD IRONS SMOOTH AND FREE FROM RUST.—Rub the flat-iron on a paper, and when this is hot, rub it with beeswax. The same paper may be used several times.—*E. M. H.* [With care, the film of beeswax may be so thin that it will not come off to any troublesome degree at the next ironing. The lard and rosin mixture, No. 24, applied and wiped off, will still leave coating enough to prevent rust. "Cousin Marion" writes, "Keep the irons in a dry place and they will not rust." Poor sad irons will rust anywhere, in damp, foggy weather.—*Ed.*]

Moisten the Air.

It is important to remember, at all times, when artificial warmth is needed, that heating the air has the peculiar and remarkable effect of causing it to take up and secrete a large amount of water. Air that at the freezing point is damp, when heated to 70°, or a comfortable condition, so hides away all the moisture, that it is unpleasantly dry; it then absorbs the moisture from our bodies, and from our lungs, and produces a feeling of uneasiness. It sucks out the moisture of the furniture, causing it to warp or crack, if not fall to pieces. When it comes in contact with the cold glass, and is reduced in temperature, it gives up the hidden vapor, and thus cold windows and walls tend to still further dry out the air. To make the atmosphere healthful, as well as agreeable, always keep upon the stoves, or over the heating furnaces, a full supply of water in wide open-top or loosely covered vessels, to constantly evaporate moisture to saturate the air. This is equally important for all living organisms in a room, for plants as well as animals, and in churches and school-rooms, as well as in private dwellings.

Original Contributions to the American Agriculturist.

Hints on Cooking, etc.

Recipe vs. Receipt.—Many writers, including some editors, use these words indiscriminately. Though Webster gives the authority of Dryden and Arbuthnot for this custom, it would seem preferable to confine the use of the word "receipt" to its proper sense, the receiving of something, or the acknowledgment of its reception, and use "recipe" only for directions for making compounds in cooking and medicines.

Cream Beer.—Prepare a syrup thus: Into 3 pints of water, put 2½ lbs. white sugar, 2 ounces tartaric acid, the juice of half a lemon, and boil together five minutes. Then stir into it ½ cup of flour previously mixed up with some water. When nearly cold, add the whites of 3 eggs well beaten, and ½ ounce essence of wintergreen. Put into a bottle and keep in a cool place. It is ready for use at once, but improves with age. To use, dissolve 2 tablespoonfuls of this in a tumbler of water, and stir in ½ teaspoonful of soda. Always shake the bottle well before using the syrup.—*M. L. B.*—[A little white of egg beaten and added to the com-

mon soda-water syrups gives a peculiar foaming or froth-like consistence to the fluid when the gas water is drawn in. We saw the directions for adding the egg sold in the West a few years ago, at \$1 to \$5 each to owners of soda water fountains.—*Ed.*]

Wedding Cake.—(Pronounced excellent at a great many weddings, says the contributor, whose name is not on the sheet with this and sundry other recipes kept for publication as we have room): 1 lb. flour, 2 lbs. raisins seeded and chopped, 2 lbs. currants, ¾ lb. citron, 1 lb. sugar, ¾ lb. butter, 10 eggs, 2 wine glasses brandy. Stir sugar and butter to a cream, add yolks of eggs, then spices, then the flour in which has been rubbed 2 teaspoonfuls cream of tartar and 1 of soda; then the fruit, and lastly the whites of the eggs beaten to a froth. The spices are, 1 tablespoonful ground cinnamon, 1 grated nutmeg, and 1 teaspoonful cloves. The loaves require from one to two hours baking.

Jelly Cake.—Mix 2 cups flour, 1 cup of milk, 1 cup sugar, ½ cup butter, 2 eggs, 1 teaspoonful soda and 2 of cream of tartar. Divide into six parts, and spread each as thin as possible in pans of uniform size. Bake about 3 minutes; when done, lay together with layers of jelly between; cover the upper layer with plenty of sugar sprinkled on, or with a thin frosting.—*Contributor's name not given.*

Bachelor's Pone.—Stir well together 1 quart sweet milk or sour milk with soda, 2 tablespoonfuls lard, 2 eggs, 4 teacups white corn meal, or enough to make a moderately stiff batter. Bake in a loaf in a quick oven.—*Subscriber, Kent Co., Md.*

Soft Gingerbread.—Two cups molasses, ¾ cup water, ½ cup butter or lard, 1 teaspoonful soda, ginger and salt as desired; mix thin with flour.—*Housekeeper, Worcester, Mass.*

"Hasty Pudding."—A housekeeper directs: "Nine tablespoonfuls of flour, six eggs beaten light, one quart milk; have a hot oven, and bake 20 minutes. Eat with sauce; butter and sugar rubbed to a cream, and flavored to your taste, is very nice."—Such a hasty pudding must be nice, if one has plenty of cheap eggs. We should want some sugar in it. Our home manuscript book calls this recipe "Sunderland Pudding."

Indian Meal Pudding.—Put a teacupful of meal into a quart of hot milk. Add 3 beaten eggs, ½ tablespoonful ginger and cloves, butter half the size of an egg. Boil 2 or 3 hours in a boiler.—*Miss Belle, Catskill, N. Y.*

Best Corn Bread.—I think none of all the good corn bread recipes printed in your invaluable *Agriculturist*, are quite equal to ours, made thus: Make a thick batter of 1 quart of sweet milk and 1 quart of butter-milk, 1 tablespoonful of saleratus and 1 of salt, 1 teacup molasses, 2 teacupfuls of wheat flour (or shorts), and corn meal enough to thicken it. Bake two hours in an oven a little hotter than for wheat bread.—A loaf still nicer, especially for poor teeth, is made by using half the above quantity, steaming it three hours, and then baking enough to just brown the top nicely.—*"Laura," Cooper, Mich.*

Brown Bread.—Mix 3 cups corn meal, 3 cups rye flour, ½ cup molasses with a teaspoonful of soda dissolved in it, with a sufficiency of cold water. Bake in a covered dish, about 3 hours, in a slow oven.—*A Friend.*

Corn Dodgers.—Salt and scald sifted corn meal. When cool wet the hands in cold water and mould into cakes like biscuits, but not very thick. Bake rather slowly, on a griddle, in hot fat, browning first one side and then the other. Split open and eat while hot, with butter or syrup, or with meat and gravy.—*Contributor's name not given.*

Preserving Green Corn.—To E. F. Green, Kalamazoo, Mich. We have tried various methods of bottling and canning green corn, but never with satisfactory results. We have also eaten that put up by those who make a business of canning fruits and vegetables, but the corn was always poor, to our taste. We know of no way to put up

green corn successfully, except to cook it on the ears, then shave off and dry it in a strong sunlight, or by the fire, or in the oven. Preserved in this way it is very palatable at a season when green vegetables are scarce.

Meat Balls.—A good way to use bits of cold meat. Cold beef or pork, chopped very fine, put into a dish with an egg to each ½ lb., crumbs of bread soaked and mashed fine, 2 onions [if liked] chopped well; season well with salt if fresh, and with pepper. Make into small cakes and fry in plenty of lard.—*M. L. B.*

Carrot Sauce.—Scrape and thoroughly clean the carrots, slice in very thin round pieces, boil tender, and then cook dry. For each quart of slices pour over a cup of sweet cream, season with salt and pepper and let them boil up for a moment. Serve hot. Thus prepared they will be relished highly, even by those who do not like carrots any other way.—*Mrs. M. Ingalls, Muscatine, Iowa.*

Heating Bottles for Fruit.—"Subscriber," of Columbus, N. J., writes that she washes and wipes the jars dry, and then sets them in the oven until too hot to handle without a cloth. As wanted they are taken out, set on a warm board, and the hot fruit poured in. In this way she has broken only one bottle in three years. By the hot water plan, described on page 262 (July), we have not broken one in putting up the last four hundred.

Claret Wine Stains.—A Wilbraham (Mass.) subscriber says that these may be removed from a table cloth by rubbing the spot, as soon as made, thoroughly with common salt. When washed, the stain will entirely disappear.

To Color Scarlet.—For one pound of cloth or yarn, mix in warm water, ½ ounce cream of tartar and 1 ounce pulverized cochineal; add 2 ounces muriate of tin. Stir until it scalds, then put in the cloth or yarn.—*Housekeeper, name unknown.*

Red Auts.—After our safes, cupboards, etc., are washed and wiped as dry as they can be with a wrung out cloth, we sprinkle on salt and rub it well into the wood and all the cracks and crevices with the same damp cloth, and have found it effectual against the auts.—*E. Carr, Camden, N. J.*

A Ready Answer.—That eccentric preacher, Lorenzo Dow, was once stopping at a hotel in New York, kept by a man named Bush. Among the guests was a General Root. They occasionally made themselves merry at Lorenzo's expense. One day General Root began upon him thus: "Mr. Dow, you tell us a great deal about heaven. Now, I want you to tell me plainly what sort of a place heaven is." With imperturbable gravity, the preacher replied: "Heaven, gentlemen, is a smooth, rich, fertile country; there isn't a bush or a root in it, and there never will be." The Root and Bush subsided, and Mr. Dow wasn't further troubled.

AN OLD FELLOW of the ultra-inquisitive order asked a little girl on board a train, who was sitting by her mother, as to her name, destination, etc. After learning that she was going to Philadelphia, he asked: "What motive is taking you thither, my dear?" "I believe they call it a locomotive, sir," was the innocent reply. The "intrusive stranger" was extinguished.

HOUSEHOLD NOTE (by a Cockney).—What to do with cold mutton. Heat it.

LITTLE three year old Susie was playing very roughly with her kitten—carrying it by the tail. Her mother told her that she would hurt pussy. "Why, no I won't," said she, "I'm carrying her by the handle."

SUBLIMITY IN HUMILITY.—The soul goes highest when the body kneels lowest.

A SCOTCH clergyman did not satisfy by his preaching a certain portion of his flock. "Why, sir," said they, "we think you dinna tell us enough about renouncing our own righteousness." "Renouncing your ain righteousness!" cried the astonished doctor, "I never saw any you had to renounce!"

THE MAN who can make his own fire, black his own boots, carry his own wood, hoe his own garden, pay his own debts, and live without wine and tobacco, need ask no favor of him who rides in a coach and four.

BOYS & GIRLS' COLUMNS.

"Where do the Weeds Come From?"

Many a boy has asked this as, for the fourth or fifth time in the season, he has bent over the onion or strawberry bed, and taken out every one that showed its head above the surface. But they won't stay pulled up. In a few days another crop is ready to try the industry and patience of the young gardener. No wonder many people have thought weeds were in some mysterious way created in the soil. But we know that every one comes from a seed which in some manner has found its way into the earth, and waited, sometimes for years, for a favorable time to sprout and send up a plant to provide another supply of seeds. It is wonderful how these inanimate things, having no power to carry themselves, manage to travel to new homes, even to emigrate to new countries. The dandelion, the thistle, and other seeds furnished with downy appendages, ride upon the wind, and may be carried miles before finding a resting place. Some seeds, like those of the burdock, and cockle, have strong little hooks ready to lay hold of the first man or animal that brushes past them, and are thus transported to other fields. Some seeds are good swimmers, or rather floaters, and the currents in the streams and even of the ocean bear them safely to foreign lands. The seed pods or vessels of some plants are made so that they fly open with a snap when the seeds are fully ripe, and scatter them over the ground. The seed of the Sand Box Tree, described in the *Agriculturist* of June, 1865, is contained in a sort of spring box, which explodes with a bang like a musket, and sends the seeds flying in every direction. Some seeds are strongly affected by moisture and dryness, when dry they are curled up, when wet, they straighten out; this gives them a rolling motion which moves them at almost every change of weather. The animated oat, and the species of geranium called "Stork's bill," are examples of this kind. The birds swallow many seeds, and deposit them uninjured in new places; in this way some plants find their way to distant islands. When we find so many ways in which seeds may be carried about, and when it is remembered that many of them may be for years buried in the soil, and yet retain their life, we need not wonder that they spring up almost everywhere. If the boys will pull up all the weeds in the garden before they go to seed, they will not only keep their own premises pretty clear, and have less such work to do each year, but they will also help their neighbors, and thus be doing some good in the world.

One Way to get an Autograph.

A correspondent of the Boston Advertiser tells the following story: I have seen an album which contains the following inscription on one of its pages: "*Treason is the greatest crime.*"—WINFIELD SCOTT. Washington, D. C., August, 1861." The name is written in the stiff characters so well known, but the motto is traced in a much bolder and more forcible hand. The album is the property of a New York lady, who visited the city at the extra session of Congress in 1861. She was very anxious to get the old General's autograph, but soon learned that it was not an easy thing to do. She, however, hit upon the expedient of sending her little girl, of about ten years, right to his office during business hours.

The child told the orderly that she must see General Scott—and she would not be put off with any plea of business, but waited half an hour, till her request was finally taken to the Adjutant. Of course, she was admitted to his presence, though he had no intention of allowing her to see the General. She persisted, however, and said she must see him. The officer finally pointed out the door which led to his room, and told her that she could go in if she dared. She took him at his word, and in an instant stood within the door. Speaking of it afterward, she said she was afraid when he first looked up, "but when he saw it was only me, he said right pleasant, 'Well, little girl, what do you want?' and I told him my ma wanted him to write his name in her book; and he looked sharp at me, and then smiled a little bit, and then shook hands with me, and asked me who my ma was, and I told him, and I told him my pa was in the army, and my ma was all alone with me; and then he just kissed my cheek and wrote in ma's book, and said 'Good morning,' to me, and I came out, and nobody didn't hurt me at all."

New and Useful Sport.

A subscriber to the *Agriculturist*, Mr. Alexander Gordon, Woodbury, Conn., has just described to us his way of catching flies, which we think may furnish lively sport to the children—almost as good as fishing or catching butterflies. Make a bag of millinet or mosquito netting, about three feet long, the upper part just wide enough to fit nicely to the flat hoop of a flour barrel; the lower part is narrowed down to a point, making the

whole funnel shaped. Tack it securely to a hoop, and fasten the hoop to an old broom handle or other convenient stick. Now you have a net which you can sweep around in the rooms and take nearly every fly. When caught with a rapid motion they will fly to the narrow end, and when enough are taken, give it a twist to confine them, place them in a basin, and a little boiling water will instantly convert them into good chicken feed.



An Amusing Play.

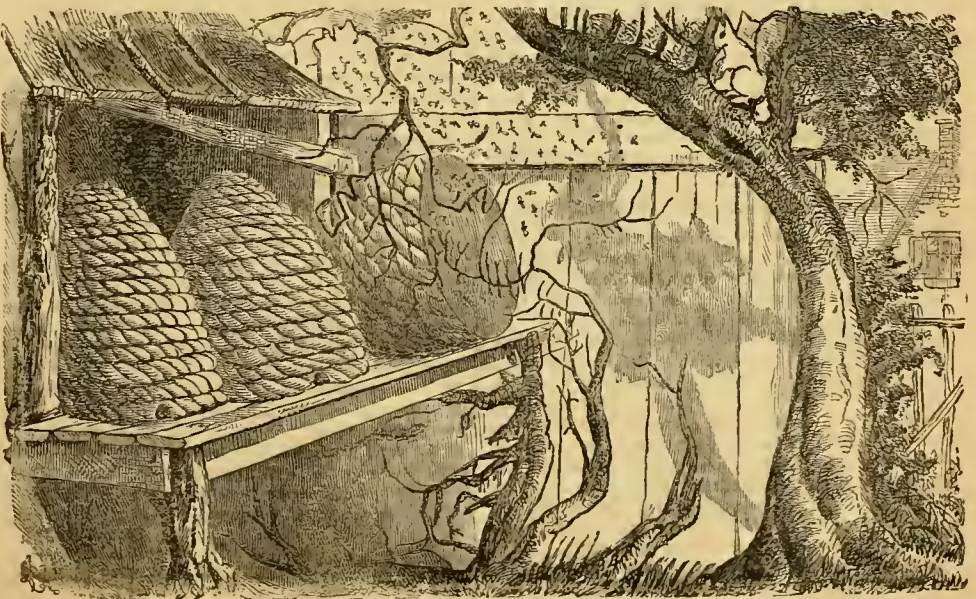
Let two or more boys each take a stick—an old broomstick is just the thing, and place it under their knees, with their arms passed under it, and hands clasped in the position shown in the engraving. Each is then to try and push his neighbor off his feet, the hands remaining clasped. The effect is quite comical, and makes much sport. A clean grassy spot should be chosen for this.

The "Crook."—"My dear friends," said a returned missionary at one of the late anniversary meetings, "let us avoid sectarian bitterness. The inhabitants of Hindoostan, where I have been laboring for many years, have a proverb that 'though you bathe a dog's tail in oil, and bind it in splints, yet you cannot get the crook out of it.' Now, a man's sectarian bias is simply the crook in the dog's tail, which cannot be eradicated; and I hold that every one should be allowed to wag his own peculiarity in peace!"

A Dutchman's Temperance Lecture.—"I shall tell you how it was. I put mine hand on mine head, and there was von pig bain. Then I put mine hand on mine pody and there was anoder. There was very much pains in all mine pody. Then I put mine hand in mine pocket, and there was noting. So I jined mit de temperance. Now there was no more pain in mine head. The pains in mine pody was all gone away. I put mine hand in mine pocket, and there was twenty dollars. So I shall shstay mit de temperance."

Puzzle for the Eyes.

We present herewith another puzzle picture in which our young readers will be pleased to discover the different figures, and find out what they are doing. Those who have examined our previous pictures of this kind will probably readily see what is intended, as the solution of one is a key to all similar designs. As we only print the names of those sending answers to the problems, etc., in the "Puzzle Column," our young friends need not tell us when they succeed in making this out.



PUZZLE PICTURE.—NO EARTHLY SWEET WITHOUT A STING.

An old fellow, who took part in the late great rebellion, was one day boasting in the village tavern to a crowd of admiring listeners, of his many bloody exploits, when he was interrupted by the question:—"I say, old Joe, how many rebels did you kill during the war?"—"How many did I kill, Sir? how many rebels did I kill? Well I don't know just 'actly how many; but I know this much—I killed as many of them as they did 'o me!"

Answers to Problems and Puzzles.

The following are answers to the Puzzles, etc., in the August number, page 295. No. 219. *Scripture Riddle*: Asa, Nun, Noon, Aziza, Anna. No. 220. *Illustrated Rebus*: First in war, first in peace, and first in the hearts of his countrymen. No. 221. *Mathematical Problem*: 3 hours, 23 minutes too fast. No. 222. *Illustrated Rebus*: Beware, indulge not over much in sleep, for fear penury over take you. No. 223. *Farmers' Enigma*: The American Agriculturist. No. 224. *Enigma*: Wood-house. No. 218. *Prize Problem*, July number, page 263. Answer. 13918 14338 feet.

The following have sent in correct answers to puzzles: Daniel Frohman, Mattie Rankin, T. Spoon, Esq., Rufus H. Roys, Frank A. Lawrence, B. J. Hammer, B. Jones, J. C. Brantigan, C. E. Amidon, Harry J. Meixell, L. A. Dale, Levi Capp, Emily L. Adams, J. H. Barr, C. A. Hege, Carrie F. Hedges, E. L. Bouton, George M. Hunter, S. C. Ware, Herman, Lizzie and Jennie Cook, Hessian E. Reynolds, J. L. Purdy, Isaac F. Tillinghast.

New Puzzles to be Answered.

No. 225. *Word Puzzle*.—The name of a distinguished rebel contains five letters. From the letters of his name may be formed. 1st, his occupation; 2d, his character; 3d, his offspring; 4th, his first victim; 5th, how he obtained this victim; 6th, the sentence pronounced upon the victim and himself. Who was the rebel?



No. 226. *Illustrated Rebus*.—A very popular proverb.

No. 227. *Word Puzzle*.—Worth 20 shillings, I measure 45 inches, and my name represents 500. What is the word?

No. 228. *Conundrum*.—When is music like a vegetable?



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A GRAND MUSICAL ENTERTAINMENT. — Designed and engraved for the American Agriculturist.

Our artist attended a cat concert a few nights ago, and has given the above spirited sketch of the scene. It was held on the roof of a shed near his window. He could not see the performers, for it was pitch dark, and so he was guided entirely by sound in making the picture. He says they sang in a very *feline* manner, though he could not understand the words. That, however, is fashionable—almost all opera singers perform in the same way, so that nobody can tell what they are singing about, and it is only now and then that church choirs talk English when they sing. Some may laugh at the idea of cats making music, but the cats themselves think it very fine; they are quite like most other singers in this also.

Spicy Letter about a Picture.

To the Editor of the American Agriculturist:

I was somewhat amused, but more vexed, to see the pictures of the "Unfortunate Boy," and the "Fortunate Girl," in the July number, of the *Agriculturist*. I am a boy myself, 12 years old; have brothers and sisters—quite a number—and I attend a school, numbering sixty scholars, of all ages between six and fourteen,—boys and girls of course. I have observed that the girls as often have their faces drawn awry as the boys, notwithstanding we always give them the best places in the schoolroom, the smoothest part of the play-ground, and never go above them in spelling,—when we have a head and foot to the class, even if they miss all the words. In winter we draw them to and from school on our sleds, or shovel nice, broad paths for them. We are very happy to do all this and feel more than repaid when we receive a bright smile, or a pleasant "thank you" from one of these little ladies. But, Mr. Editor, what vexes me is the construction that will be placed upon such pictures by those

whose habits or tempers do not lead them to associate with children, and whose memory is so defective that they do not recollect when they were "Boys and Girls together." I am afraid they will judge that boys are always so bad as to invite all the imps of mischief around them, while the dear little girls are so sweet, that it employs all the angels to take charge of their goodness! How can that little girl help smiling with so many bright beings hovering near to whisper happy thoughts? And how can the boy, who is just as pretty and good as the girl,—when they are both let alone,—help breaking his toys, and screaming with real pain, when so many little imps are tugging at his eyes, nose and mouth, and blowing fire and smoke in his face? I believe they hurt him worse than a rousing ear-ache or a dozen whippings. I am sorry for him. If the boys were a *little* worse than girls it would be no wonder; for they have so much more to vex them. But they are not. They are often sent to bed, in a dark room, when in the best part of their story; they are made to wait when company comes, and if there is no pudding left for them, it is "no matter, they are only boys." They must run errands, give the sidewalk to any body, and if they have a pet in the shape of a dog or bantam rooster, whose attainments in vocal music are their especial pride, they are not allowed to exhibit them, but must put them in a coop in some out-of-the-way corner, while the girl can have her noisy canary or even a dirty kitten in the house. In short—the girls are petted,—the boys are *snubbed*. If your pictures were both boys, or both girls, I would not have troubled you;—as it is I am yours for

EQUAL RIGHTS.

[Our young correspondent is more than welcome to our columns—we like those who can think for themselves, and will allow all to have their "say," (if we have room) if they can say it as well as this lad. By his own account

of how he treats the girls, he acknowledges that he thinks a *little* more of them than of the boys, which is quite natural and pleasant, and he can hardly blame other people for doing the same thing—especially as boys have the best chance to push their own way through the world. Perhaps some of the girls, or some other boy would like to say a word on this question; we promise fair play.]

Something Besides Money Wanted.

A Frenchman of immense wealth fitted up a most gorgeous palace in Paris. A gentleman who obtained leave to visit it, relates, that upon entering the dining room he found a table magnificently laid out. "Your master," he observed to the *maitre d'hotel*, "makes wonderfully good cheer." "Alas, sir, my master never sits down to a regular dinner; a single plate of vegetables is prepared for him." "Here, at least, is food for the eye," said the visitor, pointing to the pictures. "Alas, sir, my master is nearly blind." "Well," resumed the visitor on entering another room, "he compensates himself by listening to good music." "Alas, sir, my master has never heard the music which is played here; he goes to bed early in the hope of snatching a few minutes' sleep." "But at all events he enjoys the pleasure of walking in that magnificent garden." "Alas, sir, he can not walk." In a word; for all purposes of enjoyment, the millionaire was the poorest of the poor.

A LITTLE GIRL, who made very frequent use of the word "guess," was told by her teacher to say "presume." Presently, one of Mary's little playmates coming up to her remarked: "I think your cape very pretty, and my mamma wants your mamma to lend the pattern, because she's going to make one like it." "My mamma has no pattern," was the prompt reply, "she cut it by presume."

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[American Agriculturist, Jan. 1855.]

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MUSIC ABROAD.—Rev. Robert Nelson, at Shanghai, China, writes to Prince & Co., Buffalo, N. Y., "there are five of your Instruments here—and so fine and sweet an instrument for the parlor—and especially for sacred music, has never yet been brought to light. I have seen some of your Melodions at Niogpo, the port next south of this." Rev. I. J. Stoddart, at Assam, Hindoostan, says, "The six instruments I have ordered for myself and friends on the Brahmaputra, have given perfect satisfaction. In fact they are the only instrument that at all stands the climate of Hindoostan. The Instrument you sent me seven years previous is in perfect order." A. W. Smith, Surgeon, U. S. Army, at Cruces, New Mexico, says, "I am agreeably surprised at the volume, and sweetness of tone of the instrument." Send to Prince & Co., Buffalo, N. Y., for a copy of the New Illustrated Catalogue, which will be mailed free of expense.

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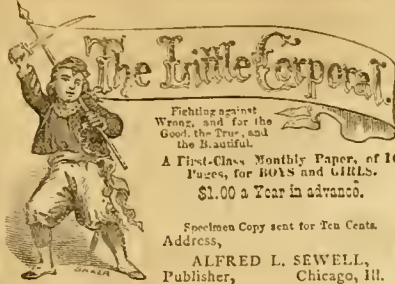
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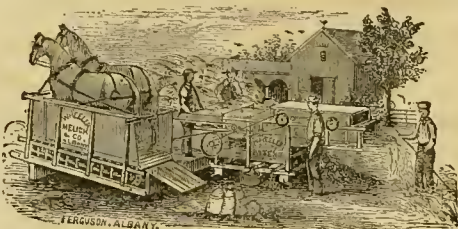
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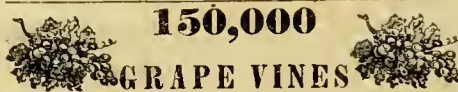
\$20.00 per 100; \$150 per 1000.

Also, very fine Camellia Japonica, in large quantity, and very healthy.

For the Catalogue of a large assortment of the best TREES and SHRUBS,

Address

PARSONS & CO., at FLUSHING, N. Y.



150,000
GRAPE VINES
OF
UNEQUALLED QUALITY,
AT THE
Lowest Prices.

A Collection of all the leading varieties, comprising Concord, Delaware, Hartford, Diana, Rebecca, Iona, Israella, Adirondac, Allen's Hybrid, Rogers' Hybrids, etc., etc.

The Subscriber refers to his former customers, and begs for a continuance of their liberal patronage. Parties wishing to plant are respectfully invited to examine our stock before purchasing elsewhere. Send for a Price List. Sample Vines sent by mail.

Grape Vines BY MAIL.

Wishing to give our plants the wider distribution which they should have on account of their excellent quality, we will fill orders for Vines by mail, promising every one who favors us with his orders, extra fine plants at a merely nominal cost. Send for a Price List. Address

G. E. MEISSNER, Richmond P. O.,
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150,000 Grape Vines.

Delaware, Ives Maderia, Concord, Iona, Israella, Adirondac, Rogers' Hybrids, and all other leading varieties. Also, 50,000 Standard Apples, 5 years old, at HUMBOLDT NURSERIES, LENK & CO., Toledo, Ohio.

SPECIAL! --2-- SPECIAL!
IONA,--- ISRAELLA,---ADIRONDAC,
&c., &c.

We offer for Fall Sales a large and superior Stock of these

BEST NEW GRAPES,

Strong, thrifty, well-established plants, with an abundance of roots. Orders by Wholesale or single Vines will be promptly and carefully attended to at the most reasonable rates. We have also a

Large Supply of Older Varieties!

Delaware! Diana! Concord! Hartford Prolific! Union Village! Allen's Hybrid! &c., &c.

Splendid Vines one and two years old, by the dozen, hundred, or thousand, at prices that cannot fail to satisfy all. Send stamps for Terms and a Catalogue.

T. C. MAXWELL & BROS.,
Geneva, Ontario Co., N. Y.

NATIVE GRAPES.

Iona, Israella, Adirondac, Christine, Delaware, Matitawny, Allen's Hybrid, Union Village, Creeveling, Rogers' Hybrids, Alvey, Concord, Hartford, Clinton, &c., &c. A fine stock of the above from bearing vines, very low by 100 or 1000, for cash. Send for a Price List.

JOSEPH KIFT, Westchester, Pa.

Send for a Copy,---A Copy of What?

Just what you ought to have. My Manual of Grape Culture. Sent free. See large advertisement.

J. H. FOSTER, Jr., West Newton, Pa.

Our aim is to Please and Satisfy our Patrons.

FRUIT TREES! FRUIT TREES!

GRAPE VINES!

&c., &c.

FOR THE FALL OF 1866.

We offer to all purchasers of Nursery Stock for the coming season a large select and varied assortment of

Standard and Dwarf Fruit Trees,

including
**Apples!! Pears!! Cherries!! Plums!!
Peaches!! Apricots!! &c., &c.,**

All of fine thrifty growth, and of the most approved varieties.

ORNAMENTAL TREES!

Deciduous and Evergreen in large supply.

GRAPE VINES.—An extensive stock, largely of the leading sorts, strong, well-established plants of

**Delaware! Concord! Diana! Hartford Prolific! Iona! Israella! Adirondac!
&c., &c.,**

by the single vine, hundred or thousand, on the most favorable terms.

N.B.—Our vines have all been grown with special care, and we are confident must give the best satisfaction.

SMALL FRUITS in all variety.

Currants! Gooseberries! Raspberries!

Blackberries! Strawberries! Green-

house and Bedding Plants!

Bulbs and Border Plants!

ROSES!

A large and complete assortment of the best new and old varieties.

Nurserymen, Dealers and Planters wanting special or assorted stock in large or small quantities, are invited to give us a call.

Wholesale or Descriptive Catalogues sent on receipt of stamp for postage.

T. C. MAXWELL & BROS.,
Geneva, Ontario Co., N. Y.

GRAPE VINES.

Iona and Israella, also Delaware, Allen's Hybrid, Adirondac, with all other valuable kinds.

In growing the above Vines, quality instead of quantity has been the object. By giving them such attention as they needed at all times, a superior class of Vines have been produced.

The Vines have not been forced by stimulants or any other means. The different varieties are offered as low as any other establishment will furnish Vines of equal quality by the Thousand, Hundred, Dozen or single. All Vines are warranted true to name.

For Price List, Address **HOLTON & ZUNDELL,**
Haverstraw, Rockland Co., N. Y.

Sing Sing Grape Vines.

I offer to the Trade for the coming Fall the best lot of Grape Vines I have ever raised, all the new and leading varieties.

As I sell only Vines grown by myself, the demand for the last three years has been greater than I could supply, my stock this year is larger, but I advise my friends to send their orders early.

Prices the same as last year, and all vines warranted true to name. Send for Price List.

J. F. DELIOT, VINE GROWER,
Sing Sing, N. Y.

GRAPE VINES.

We offer, the coming Fall and Spring, (by the Thousand or retail,) all the new varieties, also Concord and Delaware, two years old, Hartford Prolific, Israella, and others, one year, strong. Orders supplied in rotation.

Catalogues will be out by the middle of August, and will be sent to all applicants.

FELKIS & CAYWOOD, Poughkeepsie, N. Y.

Grape Vines, 1,000,000 Grape Vines!

Also, 1,000,000 Grape Vine Cuttings of Concord, Hartford, Delaware, Norton's Virginia, Iona, Diana, and all other new sorts, of very superior quality. **CHEAPER THAN EVER,** for sale. Enquire of

Dr. H. SCHROEDER,
Bloomington, Illinois.

Grape Vines.

IONA and ISRAELLA. RYDER & CO'S, Price List is now ready, and will be sent free to all applicants. Address at Sing Sing, N. Y.

GRAPE VINES FALL 1863.

Delaware, Iona, Israella, and other leading varieties of vines of good quality, for sale in quantities at low rates. Send for Circular.

J. W. HELMER, Lockport, N. Y.

DON'T FORGET.

Send right along for it. For what? Why! my new "Manual of Grape Culture." Sent free. See large advertisement.

J. H. FOSTER, Jr., West Newton, Pa.

KNOX FRUIT FARM AND NURSERIES.

GRAPE VINES.

As the demand for our Vines in the Spring, always exceeds the supply Parties wishing to purchase, would do well to order this Fall. Our Stock is unusually large and superior, and includes all the best kinds, among which, are the

Ives, Rentz, Martha and Black Hawk.

STRAWBERRY PLANTS.

Jucunda—Our No. 700, Fillmore, Agriculturist, Golden Seeded, and all other desirable kinds.

Also, a full assortment of Raspberries, Blackberries, Gooseberries, &c.

We call special attention to our collection of Currants, which we believe is the largest and best in the country.

Send 10 cents for our **DESCRIPTIVE AND ILLUSTRATED CATALOGUE**, which contains much valuable information on Small Fruit Culture.

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Box 155, Pittsburgh, Penn.

GRAPE BOXES.

The Berlin Heights Manufacturing Company, offer for sale a large quantity of Grape Box Stock, neatly fitted and ready to nail together. The stock will be packed and shipped at either Berlin or Townsend Station (C. & P. R. R.), at the following rates:

25 Boxes at 16 cents per Box.
12 " " 10 " "
5 " " 6 " "

The five pound boxes are just the thing for marketing Fancy Grapes—selling more readily and bringing higher prices. This size requires to be put in Crates holding a dozen boxes each. The stock for Crates ready fitted is furnished with the box stock free of charge. Address
BERLIN HEIGHTS MFG CO.,
Berlin Heights, Erie Co., Ohio.

Pomona's Home Nurseries.

PRICE LIST OF

STRAWBERRIES.

AGRICULTURIST, FILLMORE, FRENCH, BROOKLYN SCARLET, SMITH'S BUFFALO, COL. ELLSWORTH, GREEN PROLIFIC, GEORGIA MAMMOTH, MONITOR, 6, 40c.; 12, 60c.; 25, 90c. 50, \$1.50; 100, \$2.50; 250, \$5.00.

BOSTON PINE, CRIMSON FAVORITE, JENNY LIND, LENNIG'S WHITE, RUSSELL, 6, 25c.; 12, 40c.; 25, 60c.; 50, \$1; 100, \$1.50; 250, \$3.00.

BERR'S NEW PINE, DOWNER'S PROLIFIC, WILSON, 6, 20c.; 12, 30c.; 25, 45c.; 50, 10c.; 100, \$1.10; 250, \$2.50.

LACONSTANTE, 6, 45c.; 12, 70c.; 25, \$1.10; 50, \$2; 100, \$3.00. TRIOMPHE DE GAND and VICTORIA, 6, 25c.; 12, 40c.; 25, 55c.; 50, 75c.; 100, \$1.30; 250, \$2.75. Triomphe de Gand, 500, \$1.50; 1000, \$3.00.

JUCUNDA, "KNOX'S 700,"—LARGE STOCK OF FINE PLANTS, 6, 60c.; 12, \$1; 25, \$1.75; 50, \$3.00; 100, \$5.00.

Three each of above 21 varieties, \$1; 6 each, \$6.50; 12 each, \$10; 25 each, \$15; 50 each, \$24; 100 each, \$40. All orders must be for \$1, or more.

GRAPES.

23 Varieties. One each, \$15.

Adirondac, Allen, Concord, (single eye; 2 yr., transplanted and thousands of layers,) Creveling, 1 and 2 yr., Cayahoga, Canby's August, Delaware, (1 and 2 yr., and layers, extra, Nos. 1, 2 and 3 large stock,) Diana, 1 and 2 yr., Elsingburg, 1 and 2 yr., Herbmout, Iona, 1 and 2 yr., Israella, layers, Maxatawny, Montgomery, Northern Muscadine, layers, Norton's Virginia, Hartford, (layers, and 1 and 2 yr., single eye,) Rebecca, 2 yr., Rogers' Hybrids, Nos. 4, 15, and 19, Taylor, (layers and single eye,) Union Village, 1 and 2 year.

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PHILADELPHIA.—Best Hardy Raspberry known. 1, 45c.; 2, 75c.; 3, \$1; 6, \$1.75; 12, \$3; 25, \$6.

Belle de Fontenay, Black Cap, Fastolf, Hudson River, Antwerp, 3, 30c.; 6, 50c.; 12, 75c.; 25, \$1.50; 50, \$2.75.

Brinkley's Orange, Wilder, Franeonia, French, 3, 40c.; 6, 60c.; 12, \$1; 25, \$1; 50, \$3.50.

Catawissa, Hornet, 3, 60c.; 6, \$1; Eleven varieties, 3 each, \$4; 6, \$7; 12, \$13; 25, \$25; 50, \$45.

BLACKBERRIES.

WILSON'S EARLY.—The best Early Blackberry, \$1.50 each; 3 for \$4.25; 6, \$8; or \$15 per dozen.

Rochelle, Dorchester, and Thornless, 3 for 35c. 6, 50c.; 12, 70c.; 25, \$1.40; 50, \$2.75.

Manual of Grape Culture, Illustrated.

Also gives directions for planting and training all small fruits. SENT FREE to every person. We don't sell our Catalogue, it's plants we want to sell. Order early, as the enquiry for plants is brisk. Early orders have the advantage. Plant Strawberries from Sept. 30, to Oct. 20, and have half a crop next Spring. Address

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Acres, 3 Green-houses, Large stock, General assortment of Fruit, Ornamental and Nursery Stock. Excellent Shipping facilities for both Northern and Southern, Eastern and Western Trade. Osage Orange and Hardy Bulbs for fall. Twenty-five acres of Grapes.—Of Roses, Six acres. Send 2 red stamps for Catalogues.

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GRANVILLE S. PERRY.

ORIGINATORS and possessors of **Perry's Seedling Strawberry.** Also Dealers in Grape Vines and Grape Cuttings. Cheap. For Circular enclose stamp to

GEORGE PERRY & SON,
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VAN BUREN'S GOLDEN DWARF PEACH.

One of the great curiosities of the age. A Peach Tree with a dwarf habit, very hardy, not being subject to the many diseases to which the ordinary peach is, and bearing a very large yellow peach. The Tree itself is very ornamental, and should be in every fancy yard. Send for a Circular with colored plate, giving full description.

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FOR SALE 120,000 PEACH TREES, OF which 40,000 are Hale's Early. Also a complete stock of other Nursery Trees, Agriculturist and other Strawberries, Blackberries, Raspberries, &c. For Circular, Address
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25,000 very superior Peach Trees of best varieties, including Hale's Early. Also 5,000 Linnens Rhubarb Plants. Address **TOBIAS MARTIN & CO., Rising Sun Nurseries, Mercersburg, Pa.**

200,000 APPLE TREES. Two to four years from the bud. For thrift and beauty we believe them unsurpassed.

75,000 Peach Trees, one year from the bud.
20,000 Concord and Hartford Prolific Grape Vines, And a general assortment of other Nursery Stock.
Address **STEPHEN HOYT & SONS,**
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30,000 APPLE TREES.

We offer for sale the coming Fall 30,000 Standard Apple Trees—3 years old—will average over 7 feet high—all thrifty, fine growing Trees, and all of Standard varieties, for the Western market. At low figures by the 1000. For prices, Address **BRONSON & DODGE, Wrensau, Ind.**

NEW STRAWBERRIES.

	Doz.	100.	1,000.
Ripawam, very large.....	\$2.	\$10.	\$90.
Ella, very early.....	2.	10.	90.
Emily, (Huntsman's).....	2.	10.	90.
Golden Queen.....	1.	5.	10.
Agriculturist.....	1.	1.50	10.
New Jersey Scarlet.....	1.	2.	15.
Ida.....	1.	3.	20.
Lennig's White.....	1.	3.	20.

And all other good varieties at low rates. For particulars of the above new varieties, see my advertisement in July Agriculturist. Address

WM. S. CARPENTER, 156 Reade-st., N. Y.

STRAWBERRY PLANTS

of choice varieties for early and late family use. Agriculturist at \$1.20 per hundred. Brooklyn Scarlet, Cutter, French, Lady Finger, Garibaldi, Russell's, and Lennig's White, at 10 cents per hundred.

Sent by mail and postage paid, for 50 cents per hundred extra. Four varieties may be included in an order of 100 plants at the same rate. **SAMUEL HICKS,**
North Hempstead, L. I., N. Y.

Superior Strawberry.

Late introduction from Scotland, for particulars Address **RYDER & CO., Sing Sing, N. Y.**

CHOICE VARIETIES of Strawberry Plants for sale. Ripawam, Jucunda, Agriculturist, and other leading and Standard varieties. Price List on application. **SAM'L C. DECOU, Rocklesstown, Burlington Co., N. J.**

STRAWBERRY PLANTS.—Either Wilson's Albany or Triomphe de Gand, safely packed and delivered in New York City at \$1 per thousand. Address
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THE PRIZE STRAWBERRY RIPAWAM, raised by Jas. W. Faulkner, Stamford, Conn. Plants now ready for sale. Price \$2 per dozen. Address
JAS. W. FAULKNER, Stamford, Conn.

STRAWBERRIES FOR THE MILLION.—Best varieties in the market. Agriculturist, Wilson's Albany Seedling, Russell's Prolific, French's Seedling. All at the lowest rates. Warranted true. For sale by
WM. DAY, Morristown, N. J.

Strawberry Plants for Sale.

Agriculturist, Ida, Lennig's White, Russell's, &c. Circulars free. **P. SUTTON, Plutson, Luzerne Co., Pa.**

Durand's Seedling Strawberry.

A new variety produced from a combination of Boyden's Green Prolific, Triomphe de Gand, and Peabody's Seedling. The plant is very hardy and vigorous, has stood entirely unprotected the past three winters. The foliage, which is large, and of a rich glossy green, is sufficient for shade, though there is not a superabundance to absorb the nourishment which belongs to the fruit, and it is never affected by sun blight. The blossoms are perfect, the fruit is very solid, large, and uniformly so throughout the season, color scarlet, flesh firm, flavor excellent, equalled by very few Strawberries and surpassed by none. It is very prolific, ripening with the earliest, and continuing to bear fine fruit full two weeks after all other varieties are gone. It is emphatically the best Strawberry out, and from its intense solidity, productiveness, fine flavor, attractive appearance, and many fine qualities combined, it must take precedence over all others for family, and more especially as a market fruit. It has been seen in our grounds the past season by many of the prominent Horticulturists of the country, and notwithstanding the fact that our fruit was grown and exhibited under very unfavorable circumstances, the season here having been very cold and wet, yet all pronounced them to be very remarkable, and under more favorable circumstances undoubtedly very superior. Those who saw them in 1885, in Mr. Durand's garden, were astonished, and all pronounced them the finest they had ever seen.

We stake our reputation upon the veracity of what we say of this wonderful strawberry, and advise all fruit growers, and especially those who sell plants to secure a stock, for as this fruit becomes known, the demand for plants will be enormous. We received subscriptions for these plants during the past spring and many subscribers upon seeing the fruit increased their orders, several from one hundred to one thousand. Circulars containing further particulars of this Strawberry, reports of Committees and individuals who have seen it, and also a general list of nursery stock furnished to all applicants.

The Durand's Seedling will be ready for distribution about August 15th. We will send out strong plants only, at the following rates: One plant, 75 cents; two, \$1.25; six, \$3.00; twelve, \$5.00; fifty, \$15.00; one hundred, \$25.00; one thousand, \$250.00; carefully packed, and small lots sent pre paid by mail. In ordering, give your name, town, county and State, in full, and be particular to state whether to send by Express or mail. If by Express, give the name of the one having an office at your place.

We have the entire stock of this Strawberry, therefore all orders must be addressed to us, and must in all cases be accompanied by the cash, and where such can be had, send Post Office Money Orders. Address

FRANCIS BRILL, Newark, New Jersey.

Strawberry Plants.

Jucunda or 700, \$1 per doz.; \$5 per 100; layered in pots, \$2.50 per dozen; \$15 per 100.

Agriculturist, La Constante, Triomphe de Gand, Green Prolific, Wilson, Russell's Prolific, Brooklyn Scarlet, \$1.50 per 100; \$10 per 1000 Layered in pots, \$1.50 per doz; \$5 per 100; \$50 per 1000.

We beg to call the attention of those planting Strawberries to the great benefit derived from planting those layered in pots. Thus planted late as October, they will produce a full crop next season. Fresh Samples daily on hand.

HENDERSON & FLEMING,

SEEDSMEN AND MARKET GARDENERS,
67 Nassau-st., New York.

Strawberry Plants.

White Pine Apple, or Lennig's White.
For description see August No., page 290.

\$1 per dozen; \$5 per 100; \$30 per 1000.

Jucunda or 700, \$1 per dozen; \$5 per 100.

Agriculturist, \$1 per dozen; \$5 per 100.

New Jersey Scarlet, \$1 per dozen; \$3 per 100.

Wilson and Triomphe de Gand.

50 cents per dozen; \$1.50 per 100; \$10 per 1000.

30 other varieties at moderate prices.

Orders address REISIG & HEXAMER,
New Castle, Westchester Co., N. Y.

PRICE LIST now ready of the best varieties of Strawberry, Raspberry and Blackberry plants, including the new varieties as well as the old and reliable.

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PHILADELPHIA.

The Largest, Best, and most Productive, Hardy Raspberry. Stood unprotected, 16 degrees below, and 105 degrees above zero, and averaged over \$12 per bushel the past Summer.

Metcalfe's Early and Agriculturist Strawberries.

Wilson's Early and Kittatinny Blackberries.

Other Vines, Plants and Trees for Sale.

Send for Catalogues GRATIS.

WILLIAM PARRY, Cinnaminson, N. J.

75,000 Roses.

Embracing over 100 of the Finest Sorts.

Hybrid Perpetuals, \$25 per 100, \$200 per 1000

Climbing, " " \$25 " \$200 "

Monthly, Tea, Bourbon and Bengal, \$18 " \$150 "

General Trade Circular now ready.

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SEED WHEAT.

The Subscriber offers for sale Red Mediterranean Seed Wheat, raised on Long Island, from imported seed. Price \$3.50 per bushel. This Wheat is much sought after from the fact that there has been no Mediterranean Wheat imported for several years. Also Boughton Seed Wheat, very early. Price \$4.50 per bushel. CHAS. W. PAYNE, Sag Harbor, L. I.

BARBERRY HEDGES.

Barberry Seed for Hedges, sent by mail after Nov. 1st.
Address WALLINGFORD COMMUNITY,
Wallingford, Conn.

Dutch Bulbous Flower Roots.

Sent by Mail, Post-paid, at Catalogue Prices.

B. K. BLISS,

Offers for sale a large and well selected assortment of the above, just received from Holland, embracing the most desirable varieties of DOUBLE and SINGLE HYACINTHS; POLY-ANTHUS NARCISSUS; DOUBLE AND SINGLE EARLY AND LATE TULIPS; DOUBLE AND SINGLE NARCISSUS; JONQUILS; CROCUS; CROWN IMPERIALS; IRIS; SNOW-DROPS; SCILLAE; HAROT GLADIOLUS; RANUNCULUS; ANEMONES; JAPAN AND MANY OTHER LILIES. Also a fine assortment of GREEN-HOUSE BULBS, comprising CYCLAMENS, IXLAS, OXALIS, SPARAXIS, TEITOMAS, ACHIMENES, GLOXINIAS, &c., &c.

His

[New Illustrated Autumn Catalogue,

containing an accurate description of each variety, with particular directions for culture, so that any person, however unacquainted, can not fail to succeed, will be mailed to all applicants enclosing ten cents.

Collections containing a fine assortment of all the leading varieties of the above will also be mailed post-paid, as follows: Collection No. 1, \$20; No. 2, \$10; No. 3, \$5.00; No. 4, \$3.00. For the contents of each collection and further particulars, see Catalogue.

Address B. K. BLISS, Springfield, Mass.

Lilium Auratum.

New Golden Striped Lily from Japan.

Thus described by Dr. Lindley, in the London Gardeners' Chronicle. "If ever a flower merited the name of glorious, it is this, which stands far above all other Lilies, whether we regard its size, its sweetness, or its exquisite arrangement of color. From this delicious flower there arises the perfume of Orange blossoms sufficient to fill a large room, but so delicate as to respect the weakest nerves." It is quite hardy and deserves a place in every collection. Flowering Bulbs mailed to any address upon receipt of \$3.00.

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Is now published. It contains descriptions of the best Hyacinths, Tulips, Crocuses, Lilies, &c.,

With full descriptions and plain and full directions for Planting, Culture, Prices, &c. Illustrated with numerous fine engravings, and a beautiful colored plate of 16

Single and Double Tulp and Scilla.

My importations from the best Bulb Growers of Holland, is this season larger than ever before, and I flatter myself the finest lot of Bulbs ever brought to this country.

THIS CATALOGUE AND GUIDE

Is published for the benefit of my customers, and I will forward it to every one as rapidly as possible. To all others, I charge ten cents per copy, which is not half the cost. Postage pre-paid to all. All lovers of flowers who design to plant Bulbs this fall will find it to their interest to obtain my catalogue. Address

JAMES VICK, Rochester, N. Y.

Vegetable Seeds for Fall Sowing.

OWN GROWTH.

Jersey Wakefield Cabbage..	\$1.00 per oz.;	\$10.00 per D.
Early York Cabbage	25 "	2.50 "
Early Erfut Cauliflower	50 per packet;	\$2.50 per oz.
" Paris "	\$1.50 per oz.;	\$16.00 per D.
Simpson's Lettuce.....	40 "	4.00 "
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67 Nassau-st., New York.

FERTILIZERS! FERTILIZERS!

The best, securing a good crop of WHEAT, RYE, GRASS, BUCEWHEAT, and TURNIPS.

BRUCE'S CONCENTRATED MANURE, Manufactured from BLOOD, OFFAL, and PURE GROUND BONE.

PURE GROUND BONE, gathered fresh every day from New York markets.

Super-Phosphate of Lime,

No. 1 Peruvian Guano,

Plaster, &c.,

Sold at Wholesale and Retail, by

GRIFFING & CO., 58 & 60 Courtlandt-st., New York.

TASKER & CLARK,

Manufacturers of SUPER-PHOSPHATE OF LIME, which they are now offering at the reduced price of \$50 per ton of 2000 lbs. Also, MEAT AND BONE COMPOST, a superior article for all crops, at \$40 per ton.

N. B.—A liberal discount to Dealers.

Address

S. W. cor. 8th and Washington streets, Philadelphia.

The above for sale by Dealers generally.

Worth more than 10 Times its Cost.

WHAT! My New Manual of Grape Culture. Sent free. See Price advertisement.

J. H. FOSTER, Jr., West Newton, Pa.

Peruvian Guano Substitute.

BAUGH'S

RAW BONE

SUPER-PHOSPHATE OF LIME.

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By BAUGH & SONS,

Inventors and Sole Proprietors,

PHILADELPHIA, PA.,

under the ORIGINAL FORMULA, for 12 years past.



For WHEAT, RYE, TURNIPS and ALL CROPS and PLANTS.

The most highly concentrated, speedy, permanent, and cheap manure in the market, used by thousands of farmers in the Atlantic States, and endorsed by the most practical agriculturists in the country from twelve years actual use.

See "Ten Acres Enough," Chap. 22, page 225. Local Dealers can furnish consumers in all parts of the United States and Canada.

BAUGH BROTHERS & CO.,

General Wholesale Agents,

No. 181 Pearl-st., and No. 4 Cedar-st., New York.

Just published—"How to Maintain the Fertility of American Farms and Plantations,"—12th Edition, 85 pages—, for distribution free and mailed upon application.

BONE TA-FEU!!



Has been tested by thousands of farmers and found superior to any other manure for Fall and Winter grain, and for a top-dressing on lawns and meadows.

It is manufactured for and used as a substitute for Peruvian guano, and judged by many to be fully equal to it. It is sold at the low price of \$40 per Ton.

Manufactured only by the LODI MANUFACTURING COMPANY, 66 Courtlandt-st., New-York,

to whom all orders must be addressed.

Mr. M. A. Bradford, of Rye, Westchester Co., N. Y., says of "Bone Ta-Feu," that it is the very best compound I have ever used combining those principles which promote rapid growth and also permanent benefit to the land. I used it on gravelly soil, which had always been very unproductive, although well manured, the result was so marked as to attract the attention of all who witnessed it. An abundant crop of rye was produced measuring from 6½ to 7½ feet, followed by a heavy growth of timothy and clover. I have also used it in the garden and in every case it has given perfect satisfaction.

AMMONIATED PACIFIC GUANO.

The attention of Farmers and Agriculturists is called to this article as superior to anything else offered in the market. Equal to Peruvian Guano, and costing much less.

We offer this fertilizer in lots to suit all purchasers. A liberal discount made to the Trade.

Pamphlets with copies of Analysis by Dr. Liebig, of Baltimore, and Dr. Jackson, Massachusetts State Assayer, and testimonials from Agriculturists, showing its value, and directions for use, can be obtained from

J. O. BAKER & CO., SELLING AGENTS,
131 Pearl-st., New-York.

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For Sale by the Manufacturers. Pure Bone Dust and Fresh Bone Superphosphate of Lime. Address

A. LISTER & BROTHER,

Ceres Mills, Newark, N. J.

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Pearl-Street,
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Set in Patent Protector and Guide. For sale by JOHN DICKENSON, Patentee and Sole Manufacturer, and Importer of Diamonds for all Mechanical purposes. Also Manufacturer of "Glaciers" Diamonds, No. 64 Nassau-st., New York City. Old Diamonds reset. N. B.—Send postage-stamp for Descriptive Circular of the Diamond Dresser.

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Greene's Patent Cylinder CIDER MILL,

For Crushing and Expressing the Juice from Apples, Grapes, and other Fruit, at one and the same operation.

The subscriber has invented and patented a Machine for crushing and expressing the Juices from Apples and other fruit, at a single operation, thereby dispensing with Screws, Levers, Presses, and other cumbersome machinery, and saving all the time and labor necessary to separate the juices from the fruit by the old process. This important result is attained by a novel arrangement of crushing and pressing cylinders together in one frame, entirely unlike any Machine ever heretofore constructed for such a purpose, and which must eventually supersede and do away with all known processes for extracting juices from fruit.

The subscriber claims, and is ready to demonstrate, that the following advantages are gained over all other Machines:

1st.—With the same amount of power, *three times the quantity of Cider or Wine* can be made in a day, than can be made by any other Machine.

2d.—That from 25 to 40 per cent. more Cider or Wine can be extracted from the same amount of fruit.

3d.—That it is more compact and simple in its operation, stronger and less liable to get out of order; is adapted to hand or other powers; is portable and can be transported readily from place to place; can be driven by any kind of power, and can be attached to any machinery.

4th.—Is cheaper in proportion to its capacity.

5th.—Is stronger, being constructed entirely of iron.

6th.—In being adapted for expressing juices from all kinds of fruit, including Apples, Grapes, Rhubarb, or Wine Plant, Currants and Berries of all kinds.

7th.—That it is superior to any Root Cutter known, for the purpose of crushing roots of all kinds, for feeding stock, quicker, easier and better than any other Machine.

8th.—That it expresses the juices from Apples or other fruit the moment they are crushed, wherein lies the great secret of making good Cider or Wine.

9th.—That it does not grind or break the seed of any kind of fruit; thereby doing away with a great objection, which is urged against all other Machines.

Enclose stamp for Descriptive Circular.

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This Machine having been awarded the first Premium at every Fair at which it has been exhibited, including two New England, two New York State, East Pennsylvania, and Pennsylvania State, and Illinois State Fairs, for 1865, and having been greatly improved the present season, stands unrivalled as a machine for all purposes of heavy lifting or moving in any direction, as well as many of the lighter kinds. For further particulars send for Circular, giving description, cuts, prices, certificates, &c.

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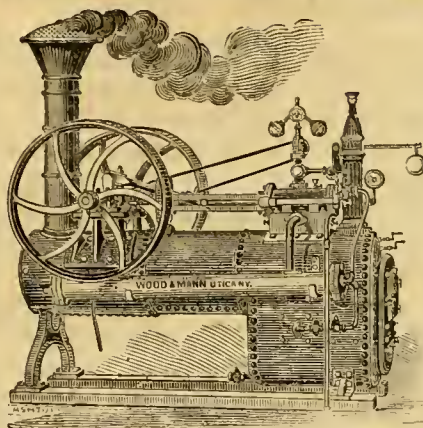
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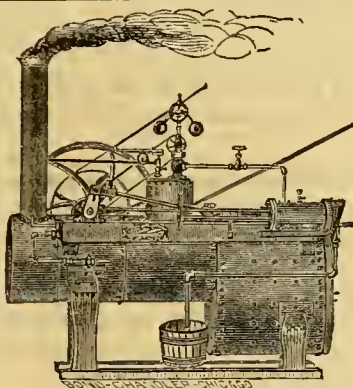
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Convenient, Economical and Cheap. Makes Pure Wine and Sweet Cider.

Saves all the Fruit.

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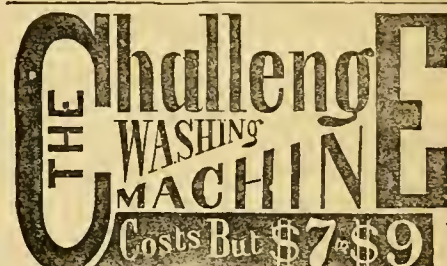
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Is easy to operate—sitting or standing—injures no garments, and does its work to perfection in from two to four minutes; is durable, and is the only washing-machine that is LIKED THE BETTER THE LONGER IT IS USED. Recommended as the VERY BEST.

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Price Lists, including leading kinds, with description of the quality of plants for the Fall of 1904, are now ready.

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Lists of Iona and Israella Vines for Vineyard planting, and for those who wish to deal very extensively

The Terms for Club-Agents and Dealers are extremely favorable, and the quality of the plants and other inducements are worthy of particular attention this season.

MY STOCK OF THE IONA AND ISRAELLA VINES, BOTH GROWN IN OPEN AIR, AND UNDER GLASS, IS VERY EXTENSIVE, COMPRISING PLANTS SPECIALLY ADAPTED FOR THE GARDEN, AND ALSO FOR THE VINEYARD.

The past winter of great severity has added its weight of confirmation to the well-established character of the IONA and ISRAELLA, for hardy endurance and constancy of production.

There remains no doubt in the minds of the most judicious observers, that upon these two chiefly rests the promise of eminent success in American Grape Culture, for fruit and for wine. (See "Present and Future of American Grape Culture.")

"The IONA equals the best European kinds in richness, purity and refinement, and in the uniform melting quality of its flesh, which can not be said of any other American grape."

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Those grown from single eyes are from the best of wood prepared for the purpose of making the most healthy and enduring plants.

I have also a fine stock from green-wood cuttings that are the best of their class, and very cheap by the thousand.

For many years I have sedulously prosecuted the purpose of producing the best possible plants of Grape Vines, and since the surpassing merits of the Iona and Israella became established, I have yearly added greatly to my means of propagation, always having chief regard to the quality of the plants for early and abundant bearing, and for hardy vigor.

My plants have been extensively disseminated throughout the entire Vine-growing region of the United States, and in other countries. Their unequalled excellence, as well as that of the packing, has been everywhere acknowledged, and the demand for the best quality of plants has greatly exceeded the supply. The present season my enlargements have been much greater than ever before, with important improvements for promoting the strength of the plants, which has been done without increase of price to purchasers, although the quality has greatly advanced.

The prices of IONA and ISRAELLA Vines of first garden quality are now so low that all who have ground in which to plant them can afford to obtain enough vines at once, to furnish an early and abundant family supply of the best of fruits.

All who are interested are invited to visit the Island, and inspect the vines. The Hudson River passenger trains all stop at Peekskill, where boats are in readiness to convey passengers to the Island, two miles distant, for a moderate compensation.

Samples of Garden-Vines of Iona and Israella, Nos. 1 and 2, three plants each, or the same of either number will be sent on receipt of the prices per dozen, with fifty cents additional for cost of sending. One dozen Vineyard Vines will be sent as above, at price per hundred.

To Dealers and those who desire to plant largely, I am

able to offer a number of lots that cannot well be represented by samples, at very favorable rates. Many who have called to examine as to quality have found my No. 3, better than they had expected to find No. 1, and have also found the purchase of special lots very advantageous.

Those who purchase by sample, will be assured of receiving the quality represented, and all will be guaranteed the safe arrival of the Vines in perfect condition at the Depot designated.

Manual of the Vine (comprising Illustrated and Descriptive Catalogues), a thorough and comprehensive treatise, in which every operation is clearly represented by engravings, 150 in number—sent for fifty cents.

Twenty-four page Pamphlet, containing a full account of the Iona and Israella, with their distinctive characteristics. "The Present and Future of American Grape-Culture," and other important matters, with engraving of Iona and Israella Vines in bearing, sent for two-cent stamp.

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GRAPE VINES OF EXTRA QUALITY.—The subscriber offers a few thousand very extra Grape Vines. Orders promptly filled with all the best leading varieties. Send for particulars to

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200,000 GRAPE VINES.—Embracing all the leading varieties: Iona, Israella, Adirondack, Delaware, Concord, &c., &c., all grown in the open air, of superior quality, and at low rates.

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Genuine Wilson's Albany Strawberry Plants, \$5.00 per 1,000.

Early Goodrich Potatoes.

Without doubt the best and most productive Early Potato. Also, a supply of the new later kinds.

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WHITE PEACH BLOW.

Ready for delivery after September 1st, at the following rates: Per Peck, \$1.00; per Bushel, \$3.00; per Barrel, \$7.00. Packages free. Orders promptly attended to.

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Early Sebce Potatoes!

This choice new variety, originating in Maine, the great potato State, has given great satisfaction this season. It is not only early, but yields abundant crops, and is of first-rate quality. I can supply them in September and October. (There is risk from frost in spring) at \$2.00 per bushel, or \$5 per barrel. JAMES J. H. GREGORY, Marblehead, Mass.

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The Union Apple Parer,

(An improvement on the turn table) is by far the most perfect Apple Parer ever invented, and is warranted entirely satisfactory. The knife parer going both ways. For sale by Dealers, and Manufactured by

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The burning and sacking of Richmond, Columbia, Charleston and Atlanta.

Read About

Visits to the graves of the gallant dead.

Read About

Terrible incidents of the battle fields, related by eye witnesses living on the ground.

Read About

What Andrew Johnson's neighbors down in Tennessee say about him. Guess they hit the nail on the head.

Read About

Persecuting the Union people shooting, hanging, burning their houses, driving them to the mountains, &c.

Read About

What two neighbor planters say about the Freedmen working, one says they never did better. I am getting along first rate. The other says the niggers won't work at all. One wants matters to go along smoothly, the other wants everything to go to smash. That's what the matter.

Read About

The poor white trash—Sand Hillers—Clay Eaters—Croakers, &c. Specimens of conversation. "I'm in my fifty one year old, and their's eight on us in the family, and in horses."

Read About

Conversation of Freedmen discussing their political rights. (See the pictures too.)

Read About

What the common people say about the Davis Government, how the war was brought on, and how they were forced into it.

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The aristocracy getting into Bomb proofs, how they got there, what the Bomb proofs were.

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What the former slave owners say of the niggers, of educating them, their voting, &c.

Read About

The progress of the Freedmen in education, what they are doing to help themselves.

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The Guerrilla's Davis' conscripting bands. Gen'l Wilson's great raid through Georgia and Alabama.

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The hummers and hangers on of General Sherman's army. Robbing defenceless women, children and negroes of every article of value, through a stretch of country for hundreds of miles, under every conceivable form of threat. The descent of the Yankees on the South was more terrible than the Goths and Vandals on Rome. No wonder they are a little out of temper.

Read About

The women during the rebellion how they urged and drove the men into the war, how they treated Yankee soldiers and Union prisoners.

Read About

The spirit and temper of a class of people showing itself in riots as at Memphis, New Orleans and other places.

Read About

What the aristocracy, middle class, poor whites and negroes think and say about reconstruction, the old government, Yankees, &c., &c., &c.

If you want to know what war means to the conquered party,

Read About

The general destruction, misery, and suffering through the length and breadth of the land, the result of four years war, cost the sacrifice of half a million of lives, and five thousand millions of treasure, including both sides. If people won't read Trowbridge's book on the South, they can't be induced to read anything. If Agents can't sell it they can't sell any book.

Agents wanting territory to canvass must apply soon, as those now in the field want more ground, more room to canvass, want to grasp the whole country.

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The aim of this treachery is to put the steadfast loyalists of the South under the feet of the "whipped but not subdued" Rebels, and to enable the latter to glut their vengeance on the former, whom they hate and curse as responsible for the most unexpected overthrow of their darling "Confederacy."

The recent wholesale massacres at Memphis and New-Orleans were but conspicuous manifestations of the spirit now rampant in the South, whereof the pro-Rebel triumph in Kentucky is a more recent example. The soldiers of Lee, Beauregard, Johnston and Hood, are now the dominant power from the Potomac to the Rio Grande; they elect each other to office in preference even to stay-at-home Rebels; they have supplanted nearly all others as policemen of Southern cities; they are organized and officered as State militia; and they ruthlessly crush every demonstration of loyal Whites or loyal Blacks in assertion of the Equal Rights of American Freemen. The school-houses of the Blacks are burned and their White teachers subjected to violence and outrage by unchanged Rebels, who relieve the work of murder and arson by cheers for Andy Johnson and execrations of Congress.

The purpose of forcing representatives of the Rebel States into Congress, in defiance of the loyal oath, by Presidential fiat and Military power, is openly avowed, with threats that those who resist it shall be treated as rebels, and a civil war thus kindled throughout the North and West.

It has thus become imperative that those who stand for Liberty and Loyalty—for the right of the Union to exist and of Man to be Free—should organize and work to strengthen the hands of Congress for the inevitable contest before us.

We must convince the South and the Copperheads that revolutions go not backward—that Emancipation is an unchangeable fact—that the glorious Civil Rights Act can never be repealed—that the rights of the humblest American are henceforth guaranteed and shielded by the Federal Constitution, and must be maintained against all gainsayers—that the days wherein Blacks had no rights which Whites were bound to respect have passed away forever.

We hold to-day the power in all the Free States of 1860, in West Virginia, and in Missouri beside. We must hold these in our ensuing elections, and add to them Maryland and Delaware—the former lost to us through treachery, otherwise Johnsonism. We must elect to the XLth Congress an overwhelming majority devoted to Loyalty, Nationality, and the inalienable Rights of Man.

To this end, let Light and Truth be systematically diffused to every neighborhood, every fire-side, throughout our broad country.

To this end, we propose an extra issue of **THE WEEKLY TRIBUNE** (identical in size and contents with the regular edition), which we will supply to all orders received prior to the 12th of September, the subscription to commence on receipt of the money, on the following terms:

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12	" " " "	5
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How to do it:

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by which the nature of taking down Lectures, Sermons, Trials, Speeches, &c., may be acquired in a few hours. FIFTY-SECOND EDITION, with a Supplement. Price 25 cents. Sent post-paid, on receipt of price, by O. A. ROORBACH, 122 Nassau-st., New York.

FOUNTAIN PEN, HAWKE'S PATENT, NO Inkstand required, one filling writes 10 hours. Also all other styles of Gold Pens. Send stamp for Circular. County Rights for sale. Agents wanted. GEO. F. HAWKES, Sole Manufacturer, 64 Nassau-st., New York.



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This is a thoroughly practical work, adapted to the use of Farmers, and to all interested in the development of

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It is systematically arranged in three parts, **Part I**, giving the Origin, Varieties and Chemical Characters of Peat and Swamp Muck; **Part II**, the Agricultural Uses of Peat and Muck, Manner of Composting, Use in the Stable and Barnyard, Effects upon different Soils, etc.; and **Part III** treats of

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In which the manner of working peat in European countries is given, together with the descriptions of many European and American Peat Machines.—It is fully illustrated.

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MY VINEYARD AT LAKEVIEW;

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Our second package which we sent for, was received all right, and has given good satisfaction, and all are highly pleased. Many think that they don't keep as good tea in Oshkosh, as your 10s. tea's—their \$2 is certainly no better. I have taken pains to scatter as many of those circulars as I could, and I presume others will get up Clubs and get their tea from you.

Still there are some "knowing ones" left yet who still insist it is a "Swindle," "Sell," and such like expressions;

but I think time will convert them, and that they will consult their pockets before paying \$2, \$2.50 per pound for tea when they can get as good an article of you for ten shillings. You may send the Complimentary package in Tea.

I am Sirs, very respectfully,

SANFORD CORNISH.

N.B.—All towns, villages, or manufacturing, where a large number of men are engaged, by CLUBBING together, can reduce the cost of their Teas and Coffees about one-third by sending directly to the GREAT AMERICAN TEA COMPANY.

*** If we needed any endorsement of our reliability, the complimentary notice we received in the editorial columns of the July number of this paper, would be sufficient, as all its readers are fully aware of the entire reliability of the *American Agriculturist*. Address

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Evidence after Eight Months Trial.

TREASURY DEPARTMENT, Fourth Auditor's Office, }
July 31st, 1866.

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GENTLEMEN,—Accompanying this, I send you our regular monthly Club list, which you will perceive is still increasing in proportions. We have now tried your Teas and Coffees for upwards of eight months, and have come to the conclusion that we get as good an article from your house, and at about half the price that we would be forced to pay our merchants here.

I congratulate your Company at the great success that has crowned its efforts in its endeavors to lighten the burden of high prices borne by our laboring people; and also congratulate our Club upon its good fortune in procuring these luxuries of life at prices so fair and reasonable. Hoping you will continue to receive a liberal share of public patronage. I am, Sirs, very respectfully yours,

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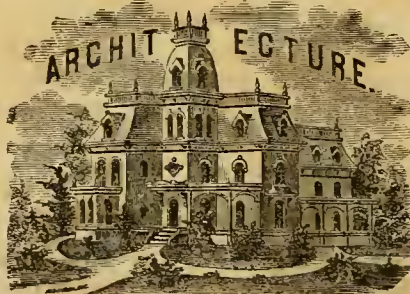
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VOLUME XXV—No. 10.

NEW-YORK, OCTOBER, 1866.

NEW SERIES—No. 237.



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THE ELK, OR WAPITI.—(*Cervus Canadensis*).—DRAWN FROM LIFE FOR THE AMERICAN AGRICULTURIST.

This most graceful and beautiful of the larger deers is a native of all the Northern United States, though in several of them it is now extinct. An old elk stag is a noble animal in his whole style and bearing. The poets of Europe, from early to the latest times, have been inspired by their stag, which is smaller and has less of forest-lord dignity than ours, though they are very similar. Mr. John Bell, the naturalist and taxidermist, has been filling a large order for the king of Italy, and seeing 17 of these elks at

his farm a few days since, we engaged our artist to sketch them for this engraving. The elk breeds freely in confinement, and when it is possible to fence them in, so as to enclose them upon recently cleared wood land, growing up full of under-brush and young wood they thrive, and may be reared for market with greater ease and at a less expense than beef. Such at least is the testimony of Mr. Stratton of Cattaraugus Co. Their natural food is about the same as that of cattle and sheep. The stag

sheds his horns annually in early spring, and gains them again during the summer. The flesh of the elk is delicate and highly esteemed in our markets; the hide makes buck-skin, and the horns furnish handles for cutlery, etc. It seems a pity that our rushing, money making, "march of empire" does not provide for the profitable culture of such beautiful and useful animals upon the rough mountain ranges on which they would thrive, and not drive them, with the red man, across the plains, and to ultimate extinction.

Two Months Free.

All new subscribers to the *Agriculturist* now received for one year, are at once entered in our books to the close of 1867. Thus, then, all new subscribers received in **October** for Volume 26, that is for all of 1867, will get the *Agriculturist* for November and December of this year without any extra charge. Note, that this offer is only for October, except for names from the Pacific Coast, and other points too distant to respond by the close of the month. N. B.—The above applies to all subscribers, whether singly or in clubs, or in premium lists, or from Agricultural Societies, etc.

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AMERICAN AGRICULTURIST.

NEW-YORK, OCTOBER, 1866.

It is a great thing to be before-hand with one's work, so as to feel free to take a run away from the farm for a few days to attend a Fair or State Convention, or to give up a few days to politics. If we could only make those plodders and day-after-the-fair folks among our readers, work up and get ahead with their work, so as to stay so the rest of their lives, we might even advocate turning politician for a few days or weeks, now and then. There are a great many who will have the time to go to fairs, and see the neat stock and tools, get new notions, and seeds, etc.—it does them good the whole year. The October fairs make a long list, and we hope all our readers will be able to go to some of them. We go to press too early to be able to report about any of the September fairs, except those of the New England Society, and of the N. Y. State Ag'l Society. See p. 346. These fairs are, day by day at this time, developing the fact that the fruits of the earth are ours in most bountiful store this year. The few frosts in August did little damage, and we confidently anticipate that the corn crop will make good its early promise. Potatoes are rotting in some sections, but not very badly. Sorghum promises very well, and there is a great breadth planted. If severe frosts hold off until after our readers receive this paper, the critical period will have passed with almost every thing.

At this season farmers are more likely to appreciate the benefits of association than at most others, and we call attention to the formation of

Farmer's Clubs.—These are useful not merely for the purpose of holding discussions upon matters of agricultural theory and practice, as too many are apt to think who "pooh" at a "debating society," but an especial use of the farmer's club is to learn about the markets, and to contrive methods of selling the produce of its members in the most advantageous way. The lone farmer gets "posted" about prices, and then runs his produce or stock off to meet the demand of some particular market, but says nothing about it until it is disposed of, and not then unless he has sold well. He keeps his information to himself, lest his neighbor should laugh at him, or in order to have the sorry gratification of seeing his neighbor, who has laughed at his mistakes the year before, fall into a trap which he has avoided. In the club all may work for one another's interest, and so advance their own. On specialties, into which communities of farmers often run, clubs have the ability to improve the products and the style in which they are marketed, so that the district shall gain a reputation for some particular articles, which will bring buyers to the place, or enable producers to realize considerably higher prices than otherwise. All such things are the legitimate objects of a farmer's club, and besides the circulating library of agricultural books and periodicals, the stated meetings for discussion, and those for social enjoyment, ought not to be omitted. We ought to have farmer's clubs all over the country, just as much as district schools. Men do not stop learning when they come to years of discretion, and there is no pleasanter school for grown up farmer folks than the farmer's club. The movers for such clubs often ask us for a constitution, and seem to be at a loss how to start without one. We have one in type, crowded out this month, which will answer a good purpose, and may be modified to suit the requirements of every club.

Hints about Work.

Perhaps there is no more important thing for a farmer to think of at this time, after he has harvested his crops for the most part, and begins to see his way clean through his fall work, than his

Buildings.—A little labor upon them now will tell. A board here and a nail there, and a few shingles newly set, will save many dollars' worth of loss or expense later in the season, when storms and winds do their work, and rain and snow pene-

trate. Warm close stables, with good ventilation, should be looked to. Make sheds to shelter manure if it is thrown out of barn windows and doors. No matter how good your barn-yard, the manure is a great deal better kept under cover. Even the hog-yard ought to be thus covered, though there should be space for the sun to shine in, and make a warm place during a good part of the day. Painting may be done in October to excellent advantage. Take time after a rain when surfaces are clean and when there will be no dust flying. And in connection with putting the buildings in order for winter above ground, do not forget the

Cellars.—Both house cellars and root cellars should be cleaned out, and well limed. If there is time, put in grouted cement bottoms, proof against rats, and mice, and water. Cement the walls also, first chinking them up, that is, filling in between the stones with small ones. A good cellar is not only a comfort, but if frost proof and rat proof, a great economy. Make cellars frost proof by banking up outside against the walls, if they are exposed, and by double doors and windows. We have discussed the subject of

Ice Houses on page 357, and have only to add here that it is worth all it costs to have a good supply of ice all the year round. The house we describe is more substantial, and hence more expensive, than is absolutely necessary, but we cannot counsel our readers to do half-way work, nor to make a poor thing. One 10 x 10 feet inside will pack 4 cubic yards of ice for each foot of elevation.

Live Stock at this season require the careful attention of the farmer, for it is now that the question of profits is really settled. The weather is not severe, yet bracing enough to give animals an appetite. There is an abundance to eat, and it is not difficult to get stock in good condition. The careful husbandman will husband those things which will keep best, and feed out those which are of a perishable nature. Soft corn, mubbins, grown grain, green pumpkins, and the fruits of the orchard, which are liable to decay, may be fed to cattle, or cooked for swine, and help to get them in first-rate order for winter, before the grass fails, and while it begins to afford not quite so good feed as is desirable. It is ruinous policy to neglect

Cubes and Colts at any time, but especially give them a good start and let them face the winter with a coat of fat on their ribs, and if they look better than your neighbor's, you will be very apt to keep them growing, by grooming them now and then, and providing at least warm sheds for them.

Cows ought to be yarded at night at all seasons, but at no time is it more important than now. The nights are long, the cows need some extra feed, which is best given in racks or in troughs, or in the proper stalls, and the verdure they crop, consists largely of old leaves which are full of inorganic or ash constituents, hence their dung is of more value than usual. Keep up the flow of milk by feeding pumpkins (without the seeds), roots, soft corn, etc. Practice the same course of feeding for

Bees, for they lay on flesh very fast now, and will do as well on grass and the articles mentioned in liberal quantity, as on much richer food later in the winter. Leave only the *finishing* to be done by ad by, and secure the foundation of fat in this month and next. With

Hogs, the case is a little different. They should be putting on fat now for good, and have all they can eat of thoroughly cooked rich food. Keep them clean, giving them warm nests and plenty of litter. Most farmers lose half the hog manure—the most valuable of all made on the farm, except that of fowls. Hogs thrive so much better for being clean, that it pays to wash them. A watering can, aquarius, or syringe will make short work of it. Clean the troughs daily; have separate troughs for water and feed, and let there be a full supply of water at all times. A little salt in the food is good, perhaps essential. Let hogs have ashes and charcoal. They even like to root among coal ashes; and superphosphate and ashes, Mr. Harris says, they eat with avidity. Should any scour, give powdered chalk mixed in their feed.

Sheep.—For butchers' early lambs (March) use if possible South Down, Leicester or Coltsfold rams this month. The better the sire, the better the stock. Yard the sheep on frosty nights, and as grass fails, give extra feed. Those intended for fattening during the winter should have a little grain while still on grass; they will fatten much quicker for it when shut up for feeding—and will gain more this month than at any other period. Check scours by isolating those ailing, and feeding milk porridge made with fine wheaten flour.

Manure.—Watch the manure heaps with all jealousy. Get in stores of muck, leaves, and litter of all kinds, and either put it under cover in places convenient, or under any temporary roofing, which will turn the rain and keep it dry until needed for use. The yards should be frequently cleaned up, and all droppings thrown into heaps, and composted with litter or soil. Dust gypsum over the stable floors, and on fermenting manure wherever it is; bring to the hog yards potato tops, swamp grass, and any kind of vegetable matter which may be found, or fill low spots in the barn-yard with it. Stack coarse litter which the salt meadows or the upland swamps will cut for similar use during winter. Make provision to save liquid manure, and pump it over the solid manure as it is piled up, mixed with straw or other litter. This maintains fermentation, yet does not let it proceed too far and cause a loss of ammonia.

Soiling.—To have a full flow of milk earlier than the grass is fit for grazing, manure heavily, sow rye early, and again as late as you dare to and expect it to stand the winter. Unless the winter is a peculiarly open one, or unless the snow lies very heavy and long, there will be fully 10 days difference in the growth of the crops in May. This will afford the first green feed for the cows, and their milk will at once increase greatly, even though they have had roots: spring rye, oats and peas, etc., follow.

Winter Grain.—If not already done, spots in the wheat fields where the land is poor, may have a dressing of fine, well rotted manure, scattered on the surface. Rye may often be sown at the very last of the month, but much is risked by delay after the middle in our latitude. In the earlier part of October, wheat is often sown to advantage, but do not delay after the 10th, and even then there is great risk of a poor stand and of winter killing.

Fall Plowing should not be neglected from pressure of other work, but hire an extra hand or two and keep all the teams going. This year's corn ground intended for barley and oats next spring, should be plowed as early as possible. The stooks of corn should be set in straight rows, as far apart as possible, and the ground plowed between them, finishing after corn is husked, and stooks removed.

Draining.—As other work is disposed of or becomes less pressing, and as other farmers discharge their laborers, it is a favorable time to put a good force of men and teams at draining. With a little contrivance, and the use of long yokes or long eveners, the plow may be drawn in the ditches, the horses or cattle walking on each side, and thus the labor be greatly lightened as well as expedited. Narrow ditches, $3\frac{1}{2}$ or 4 feet deep, (not less,) as nearly level as possible, and yet with a regular slight fall, are best whether laid with stones or tiles. Study the lay of the land and drain with system.

Corn should be husked as soon as cured, and not left in the shock, subject to the attacks of vermin and birds, and to damage by rain, causing mildew. Corn houses should be of open slats and rat proof. Before corn is put in bins, soft ears should be thoroughly sorted out, and all not sound should be cured by spreading thinly on the floor of a hot dry loft.

Corn Stalks bound in small bundles and set in stooks dry slowly, and ought to be taken down and re-stooked once in a week or ten days. When cured, stack near the yards, and top the stacks with straw.

Root Crops.—The treatment roots receive depends much upon the location. Dig potatoes when they have done growing. Turnips make their best growth in this month, so leave them to the last. Carrots are injured more easily than other roots, and so should be pulled early enough to be out of

the way of hard freezing. Ruta-bagas and Mangels must be gathered before the ground freezes. See valuable article on preserving vegetables, page 362, remembering that the season at Bergen is at least a month later than that of the Northern tier of States.

Apples and Cider.—Handle fruit without bruising. Lime barrels are excellent to pack it in. The best kept apples we ever saw were packed in barrels between layers of leaves raked up dry. Cider may be concentrated on any good sorghum evaporating pan, to a delicious jelly, which, without addition, keeps perfectly for years. We have seen some made last year on Cory's evaporator which is excellent.

Weeds.—Collect and burn, and cut so as to prevent their maturing seed.

Orchard and Nursery.

The promise of the spring's blossoms is not generally borne out by the autumn's harvest, and many an orchard that seemed good for a thousand barrels, will not give fifty. While we may not be able to say that fruit is scarce, it is certain that the supply is so inadequate that good prices must rule. Whoever has a moderate crop of fruit, should manage it so as to get the most from it. Careful picking, selecting, and packing are needed. If "a few scabby sheep spoil a whole flock," so a few badly developed mis-shapen apples spoil the looks of a barrel. Pick all the fruit by hand, take care that none is bruised in handling, and pack in clean barrels. For shipping, apples should be headed up under pressure. It is found that there are only a few of the top apples bruised when the head is pressed on, and the damage as a whole is much less than when the fruit is left loose enough to rattle, and all get more or less bruised. Several patent presses are sold for use in barreling fruit. They consist of a clamp to go over the barrel, and in the clamp is a screw for pressing down the head. Any ingenious man can, with a rail or bit of scantling, rig up a lever press to answer the purpose. Fruit should not be picked until it is "tree ripe;" that is, until it has obtained all the nourishment it can receive from the tree. This period varies greatly with different fruits, and nothing but experience can serve as a guide for the orchardist. Late sorts may be kept on the tree until light frosts come.

Autumn Planting is generally to be preferred for apples and pears, provided it can be done early enough. The soil of the proposed orchard should have been prepared in advance. Whether trees are to be planted in the spring or this fall, order at once and heel them in, as noted on page 363.

Drains are needed in many orchards, and if the operation was neglected at the time of planting, drains may be put now between the rows. Tile drain is the best, but where stones are abundant, it is often more economical to make good stone drains.

Drying of fruit should be continued, according to hints given last month, and

Cider may be made as soon as the fruit is ready. Good fruit, and care, and cleanliness in all steps of the operation, are essential to the production of good cider. If the juice be fermented with the same care directed for wine, (see last month, p. 325) a superior article will be the result.

Buds set late, will, especially if the autumn should be warm and the stocks continue to grow, need to have their tyings loosened or removed.

Seeds for nursery stock are to be secured this autumn. Apple seeds are obtained by washing the pomace from the cider mill. Spread thin and dry, and keep in a cool place until spring.

Ornamental Trees.—Set the deciduous ones as soon as the leaves drop; the earlier the better.

For other hints still in season see last month.

Kitchen Garden.

This is an excellent time to prepare the ground; drains may be laid and the soil manured, plowed and sub-soiled. The way market gardeners put on the manure would astonish most cultivators. We were recently in the grounds of an amateur friend, who pointed to his manure heap with the exclamation,

"there is my head gardener."—Now is a good time to engage the "head gardener" for next year, and the size of the compost heap should show that a favorable engagement has been made. Not only stable manure, but brewer's hops, sweepings of the malt floor, bone, whalebone waste, and hair and animal matters of all kinds, may be made available; nor should home-made poudrette, from night soil, be overlooked. We have frequently described the preparation of this important fertilizer.

Preserving Vegetables for the winter. The article on page 362 gives useful hints. Small roots may be put in a cool cellar in bins and boxes with sand, or light soil, enough to keep them from drying.

Asparagus.—Cut the tops when growth ceases, and burn them. Cover the beds with littery manure or leaves.

Beets should be taken up before the advent of hard frosts, else their sweetness will be impaired.

Cabbages.—Plants sown for wintering over, should be set in cold frames about $2\frac{1}{2}$ inches apart; set deeply, and do not cover until cold weather. To winter cabbages, cover with earth, in the manner mentioned on page 362. We have had better success in this way than with setting them upright in roofed trenches. Savoys, and other late kinds, may be left out until the ground is crusted with frost.

Cauliflowers.—Treat young plants the same as cabbage plants. Old plants that have not headed, should be put in a cold frame, or a light cellar.

Celery.—This is best preserved out of doors in trenches a foot wide, and as deep as the plants are tall. The celery is packed closely in the trench in an upright position, and as cold weather comes on, the tops are to be gradually covered with straw, leaves, or other protection, adding to the covering as the weather becomes colder, until it amounts to about a foot in thickness. To be more readily accessible, a portion may be put in a box in the cellar, and packed in moist sand to keep from wilting. This will not do if the cellar be warm.

Hot-beds.—Gather a good heap of rich loam and put it under a shed, or cover it with boards, so that it may be got at in February and March, for use.

Parsnips.—As many of these may be dug as are required while the ground is frozen, and placed in the cellar or in pits; the rest are left as they grew.

Rhubarb.—Make new plantations by dividing the old roots, securing a bud to each portion of the root, any time before the ground closes. The richer the soil, the better. Cover beds with coarse manure.

Saladify is to be treated the same as parsnips.

Spinach.—Keep the late plantings free of weeds, and when hard frosts come, give a light covering.

Squashes will not bear frost without injury. Gather in time and keep at an even temperature.

Sweet Potatoes.—As soon as the vines are blackened by frost, dig on a bright day and let them dry before housing. Pack in cut straw or very dry sand; do not bruise them, and keep where the temperature does not fall much below 60°.

Tomatoes.—The green ones that will not ripen before frost, should be picked for pickles.

Fruit Garden.

Prepare the soil by draining, manuring and plowing or trenching. Most small fruits like a rich soil. Planting is to be done as early as possible.

Blackberries are set six feet apart each way, or in rows 8 feet apart, plants 4 feet distant in the rows.

Currants and Gooseberries.—Bushes may be set and cuttings made. See page 364. Training currant bushes to a single stem, like a small tree, is now abandoned, and 3 or 4 main stems allowed to grow.

Grapes for wine or for keeping are allowed to remain on the vines until there is danger of frost. For boxing see last month on page 323. To preserve them for use, put in small boxes and keep at a uniform low temperature. Vines may be set as soon as the leaves fall, and pruning done; if the wood is wanted for cuttings, bury it before it dries.

Strawberries.—New plantations may be set early this month; see notes given last August. Do not

cover too early. Better keep the covering off until the ground is slightly crusted with frost, than to cover earlier. Straw, leaves, or corn stalks may be used.

Flower Garden and Lawn.

This month we usually have grand weather for work, and it should be devoted to making improvements in the ground, laying drains, road and path making, etc. Those who enjoy the rich tints of the autumn foliage, should plant trees with a view, in part to the autumn effect, of their changing colors.

Annals.—Sow hardy kinds, such as Larkspurs, Gilias, and all those that do best when self-sown.

Bedding Plants.—Make cuttings at this time of all such plants as are not intended to be taken up.

Chrysanthemums.—Pot for blooming in-doors, and when in flower, mark those desirable to propagate.

Dahlias.—When the frost has blackened the plants, cut them down. Lift on a fine day and allow to dry off in the sun before being housed.

Gladiolus is to be treated the same as the Dahlias.

Lawns may be laid down this month. Draining, deep plowing, and thorough pulverizing of the soil, should be attended to. Roll after seeding, and just before the ground freezes, roll again.

Perennials.—Even the hardiest do all the better with a winter covering. Divide and re-set clumps.

Pinks and Carnations.—Pot rooted layers and set in cold frame, where they can be kept rather dry.

Pansies and Violets.—Put roots in a cold frame for winter blooming, as was directed last month.

Roses.—See article given on page 323, last month.

Tuberose, not done blooming, may be lifted with a ball of earth into pots or boxes. If they are set in a green house or room, they will continue flowering.

Transplant all kinds of deciduous hardy shrubs.

Green and Hot-Houses.—Take in tender plants before the cool nights check their growth. Have all the pots clean, and renew the top soil; remove dead leaves, cob-webs, and prune and stake where needed. The change from free air to the confinement of the house should not be too sudden, and abundant ventilation must be given whenever the weather is fine. Bring no insects into the house with the plants, but have everything free from these pests before it is brought in.

Near cities a large business is done in forcing hardy herbaceous plants and shrubs, such as Dicentra, Lily of the Valley, Deutzia gracilis, Weigela, etc. Pot now and keep dormant until near spring.

Annals may be sown in pots for winter blooming, and bulbs may be potted. Towards the end of the month some fire will be needed on cool days and nights, and its management will require caution.

Cold Grapery.—The wood should be thoroughly ripened, and so leaves should be left on until they fall spontaneously. Avoid sudden changes of temperature, and as cooler weather comes on, keep only the upper ventilators open. Shut up entirely in cold and stormy weather.

Read the Premium Descriptions.

—Explanation.—We add several extra pages this month, to make room for our Premium List and descriptions. This will be found worth looking through, for though a business document mainly, there are numerous items of information scattered through the Descriptions, which will be interesting and often useful.—The list is quite extensive, and the articles offered of so great value, and so easily obtained, that we doubt not there will be one or more persons in every neighborhood, who can get some very desirable thing by the little effort required to raise a club of subscribers. We believe and know the *Agriculturist* is doing a good work of itself, and we aim to get it introduced into tens of thousands of families, where it will not chance to find its way unless it is brought directly to their attention by some one who will be well paid for his or her trouble, by the fine premiums here offered. The enlarged circulation thus obtained, so increases the value of our advertising department that the loss on subscription money is amply made up.—Many have already (Sept. 20) sent in clubs of new and old subscribers for 1867 and secured valuable premiums.

\$1,250.00 IN PRIZES.

I—Prairie and Western Farming.

\$500 IN PRIZES.

The immense Western regions brought under culture in recent years, and yet to be occupied, give great importance to that section. In order to call out and systematize as much practical information as possible, which shall be useful not only to those already at the West, but also to a vast multitude yet to go thither from the Eastern States and from the Old World, the Editors and Publishers of the *American Agriculturist* offer a

1st Prize of \$350, for the best practical Treatise or Essay upon *Western Farming* in general, and especially upon *Prairie Farming*, including the various particulars of selecting land, getting on to it, bringing it under Culture, Fencing, Crops, Animals and Fruits, their kinds and treatment, etc. In short to give a Clear Guide to beginners as well as to old cultivators; to tell what to do, and how, and when to do it best—in plain, simple language, just as one would talk from day to day to a new-comer who needed to learn all about farming.

2d Prize of \$100, for the Second Best Treatise.

3d Prize of \$50, for the Third Best Treatise.

The manuscripts to be ready March 1st, 1867, and at least 200 pages of Foolscap. See General Remarks below.

II—The Cultivation of Cotton.

\$500 IN PRIZES.

The great importance of the Cotton crop, the general interest in its improved culture, both among Northern and Southern men, and the little comparatively that is recorded in books or otherwise on the subject, induces the Publishers of the *American Agriculturist* to offer a

1st Prize of \$400, for the best Treatise or Essay giving full, plain, practical directions, all about Cotton Culture, from the soil and its preparation and cultivation, to the gathering, packing, and marketing of the crop—all so plainly stated as to aid not only the old routine cultivator, but also to be a guide to the new cotton grower.

2d Prize of \$100 for the Second Best Treatise.

The manuscript to be at least 200 foolscap pages, to be ready by January 1st, 1867. See General Remarks below.

III—Timber and Fencing for Prairies.

\$250 IN PRIZES.

The great importance of this subject to millions of Western cultivators, induces the Publishers of the *American Agriculturist* to offer the following:

1st Prize of \$150 for the best Treatise or Essay on the securing of Timber and Fencing material, for the timberless prairie regions of the West, including also Hedges, Wind breaks, etc.

2d Prize, \$75 for the Second best Essay or Treatise.

3d Prize, \$25 for the Third best Essay or Treatise.

The manuscript to be ready by or before February 1st, 1867, and contain at least 150 pages of foolscap. See General Remarks below.

General Remarks.—The above prizes are offered for the purpose of calling out more general and systematic information than can now be found in books or papers. The first and most important aim is to gather information useful in preparing the pages of the *American Agriculturist*, but it is the expectation that at least one of each class of Treatises will be worthy of issuing in a more compendious or complete book form.

The lowest number of pages in each case is named above. No maximum limit is fixed. Those essays will be most valuable which give the greatest amount of really practical information without useless dilution in wordy or high flown phrases and sentences. Compilations of other men's writings, or a rehash from Patent Office or other Documents, are not what is aimed at.—Drawings and Sketches will give additional value.

The several Essays will be submitted to Committees of the best Judges that can be obtained, among those who are practically acquainted with the several subjects.

The Essays receiving the prizes will be the exclusive property of the Publishers of the *American Agriculturist*.

Should there be nothing offered at all worthy of any one or more of these prizes, in the opinion of Competent and Impartial Judges, the prize will of course be withheld. Any one proposing to write for them, is requested to send for a printed slip, giving more full information than we have room for here. All communications of this kind will of course be strictly confidential.

About "Harris Brothers," Boston.

During the summer, a letter from Boston asked the terms for 10,000 to 50,000 subscriptions, to the *American Agriculturist*, to be used in building a Home for Disabled Soldiers. Our reply was, that we could give no answer until we knew something of the enterprise. Afterwards, two men called on the same business, giving their names as "Harris Brothers." Great inducements were held out to give us a splendid increase of circulation. The answer again was, that we could not do anything to forward any enterprise not known to be legitimate and proper, however it might benefit us. In answer to the question what our terms were, etc., the remark was made that we received subscriptions from any one, on our regular terms, when accompanied by the money. Nothing more was heard of it, until the following correspondence. (The letter was accompanied by proof-sheets of a circular and newspaper orders, such as have been recently distributed by Harris Brothers.)

Boston, Mass., July 19th.

Mr. CHASE, care *American Agriculturist*
Office, New York.

SIR:—A little over a month ago we called on you, and had some conversation in reference to an enterprise we were then starting. We have so far completed our plans, as to be able to submit for your inspection our documents and papers. We propose to carry out all we promise, and all we expect of you is, that you will furnish the "Agriculturist" to those who may order it, and we will pay the orders upon presentation, or will deposit an amount with you sufficient to cover what orders you might receive in a given time. We do not ask you to endorse our enterprise, but simply ask you to furnish the papers at as low a rate as you can; at any rate we expect to get the papers at the Club rates.—You are of course at liberty to investigate, and after you have perused, please write us, and tell us if a deposit is necessary, in order that our orders may be recognized when received by you. We shall advertise extensively, and certainly your subscription list will be largely increased.—Let us hear from you at your leisure, and any suggestions that you may make will be carefully considered.

Yours in haste

HARRIS BROTHERS.

[REPLY.]

New York, July 27, 1866.

Messrs. HARRIS BROS., 50 School-st., Boston.

Returning to-day from a week's absence, we find yours of 19th.—We do not see any essential difference between your proposed "National Distribution," and any other Lottery; and we must protest against your issuing tickets, etc., that give even the quasi endorsement of the *Agriculturist*, as your tickets and bills appear to do.—We cannot consent to receive the "Newspaper Orders" on any conditions, or to receive any deposit for them. The only answer given you by our Partner, Mr. Chase, was, that we received subscriptions sent in with the money, and at club rates from those who sent in enough to make up a club. He also objected to being in any way mixed up with your proposed plans, at least until we should examine and approve them—which has not been done.—Further, we shall deem it our duty to the public, to show up your scheme in its true colors, and warn people against it. We warn you not to issue any circulars, announcing that you have "made" any "arrangements" with us, for supplying copies of our paper, on any terms, to forward your enterprise. Yours respectfully,
[Signed] ORANGE JUDD & Co.

We supposed the above letter had ended the matter, so far as we were concerned, and we heard nothing more of it, until just after the the September *Agriculturist* had got well to press, when we began to receive from all over the country, copies of a flaming Circular, Orders for the *Agriculturist*, etc. The circular announces tremendous prizes, and, among other things, says:

"EVERY PERSON who invests FIVE DOLLARS in the NATIONAL DISTRIBUTION, receives, in addition to a chance in the Grand Dividends, one year's subscription to either the '*American Agriculturist*,' published in New York City, the '*Rural American*,' published at Utica, N. Y., or '*Ballou's Literary Magazine*,' published at Boston, Mass. The Managers of the Distribution have made such arrangements with the publishers of these celebrated Rural, Agricultural, Horticultural, Floral and Literary publications, that they can give, as a gratuity to each purchaser of a Certificate, one year's subscription as above. Thus, every investment of \$5 entitles the investor to a chance in the Dividends, ranging from \$5 to \$30,000, a year's subscription to the Leading Agricultural and Literary Papers of America, and lastly, aid and encouragement to one of the most noble, patriotic and benevolent Institutions ever devised by man."

Any one can see, by reference to our above letter, that this is a downright imposition. Harris Brothers "Enterprise" is, neither more nor less, a Lottery Scheme, and we shall wonder if it is allowed to continue in Boston. We refuse all "certificates" coming from Harris Brothers. We find it impossible to answer otherwise than by this notice, the letters of inquiry about the concern, as they are so numerous.

Acknowledgments.—The unusual pressure upon our columns, notwithstanding we have added extra pages, crowds out a number of acknowledgments already in type. Those who have sent documents, catalogues, specimens of fruits, flowers, vegetables, etc., will understand that their favors are not unappreciated nor overlooked, but we are not able at this time to make a separate notice of them, simply for want of room.



Containing a great variety of Items, including many good Hints and Suggestions which we throw into smaller type and condensed form, for want of space elsewhere.

Mark All Subscriptions sent in, as New or Old.

For Market Report and List of Fairs, See Page 379.—The great press of matter, after omitting several pages prepared for this Basket, compels us to take out advertisements, and put the market and fair lists in an unusual place as above noted.

Our "Political Preferences" are inquired after by a few subscribers. Well, we exactly agree in sentiment with the man who is positively every way right and sound in his political views. Does any one disagree with us now? This is all we are allowed to say in a paper that has nothing to do with politics.

"Stop My Paper," says a subscriber, enclosing an advertisement of the N. Y. Tribune cut from our business columns, which we had not even chanced to notice before.—"Stop my Paper" has been said by one or two persons every time we have inserted an advertisement of the Herald, World, Times, or Independent.—We advertise in many papers, of all political shades except those positively and professedly opposed to the Union. The more enterprising journalists, who know where to find a good medium, use our columns largely, and thus we get part of our money back. Journals so out spoken in their columns, and in their advertisements especially, as those above named, can deceive no one, and as they "have the ability and will to do what they promise to do in their advertisements," our rules in no way cut them off from using what space they pay for at full rates. Nobody is obliged to buy or read. If anybody "having the ability and will to supply them," should advertise to supply pigs, or panthers, as household pets, we might admit his card, without thus commending his animals for the use recommended by the seller.—We aim to admit nothing deceptive or immoral; how well we do this, our work must show. We can not, however, send around and ask permission of all our readers before admitting an advertisement.

Barometers.—Letters giving details of experience in using the barometer, and of its benefits, are coming to hand, and we solicit still more of them. Let us have a full report, at least from those who have had our premium barometers. We can not of course publish these long communications, but they are useful, and we will endeavor, by and by, to give a summary. So far these letters, with an exception or two, speak of good results. Some who have not been so successful in always predicting storms and fair weather with certainty, as they hoped to be, yet speak very favorably of the general accuracy of the instrument, and we judge that not more than one of them would be willing to part with his barometer on any consideration.

Valuable in Every State—Why.—

An Illinois subscriber writes that "the Editors of the *Agriculturist* should visit that State before they can get any idea of the magnitude of the West and what farming is there." Why, friend, the Senior Editor has traveled for observation, partly on foot, through at least thirty States, and the Canadas—including over 10,000 miles in Ohio, Michigan, Illinois, Wisconsin, Southern Minnesota, the eastern half of Iowa and Missouri, part of Kentucky, besides Tennessee, Arkansas, Mississippi, Louisiana, and all the Atlantic States from Maine to North Carolina. Another has traveled for the same purpose in all the Middle States East of the Mississippi, and spent a year in the Southwestern Country. Another leading Editor spent several years in the employ of the Government, making observations upon the country at the Southwest and up and down, and across the Continent to California and back. A fourth Editor devoted a season to examining the Sugar, Cotton, and Rice regions of the South. Constant observations and correspondence are received from every section of the country.—The prizes offered elsewhere in this paper (page 344) are only a small part of the expense and effort constantly put forth to gather general information.—But aside from the personal advantages enjoyed by the editors, and the other sources of information, the great principles of soil culture are the same everywhere. Animals, fruits, etc., need the same general rules and observations. The Household, and Children's Departments, and the engravings, are equal valuable in Nova Scotia, New York, Nebraska, Texas, Oregon, or Australia. We indeed write much about manures for the older States, but though there is

enough other reading for the newer West, we advise farmers there that some attention to this subject is worth their while, against a day of necessity—"A stitch in time, etc."—To show the adaptation of this paper to the West, we may mention, that a Western paper begged earnestly for home support on the ground that eastern papers were not at all adapted to that region—basing its remarks specially at this journal, which seemed to be a favorite in its bailiwick. The very same paper had only 21 columns of reading, and of these 15 were filled with articles that first appeared in the *American Agriculturist*; 7 columns were directly credited to this journal, and 8 were not credited!—A multitude of persons, residing in every section of the country, including several away on the Pacific Coast, have detailed to us, how single hints, derived from or suggested by reading this paper, have resulted in very great pecuniary value, often to the amount of hundreds and thousands of dollars in individual cases.



Picking Apples for Cider.—Mr. G. R. Green, Hudson, N. Y., finding hand picking too slow, and wishing to avoid the stones and dirt that will be mixed with apples when gathered from the ground, contrived the device shown in the engraving. It consists of a spread made of stout burlap, 20 feet square, bound on the edges. In the center is a hole large enough to encircle the tree, and provided with a drawing string to fasten it to the trunk. From this hole is an opening to one side of the spread, to allow it to be put around the tree, and the opening is afterwards laced up by means of a string running through eyelet holes. In each of the corners of the spread a strong eyelet hole is worked—or what is better, an iron eye may be inserted. The spread being placed around the tree, three of the corners are raised up and stretched out by means of slender poles, in such a manner, that the corner without a pole will be the lowest. Under this depending corner is placed a barrel, or wagon if the tree be a tall one. The apples are shaken down on to the sheet, and roll towards the lower corner, where they are caught. Though apples are but little bruised by this treatment, it is not recommended for those intended for long keeping.

Sundry Humbugs.—Aside from a large number of letters about "Harris Brothers," and J. D. Miller, our batch of letters about swindlers reaches only about a hundred this month, by far the smallest number for any month during a past year. We learn that the exposures of the *Agriculturist* have made the "Circular" and "ticket" business so unprofitable through the North, that the swindlers have turned their attention more to the Southern States, where they are now operating with all possible speed and diligence. We must try to get the *Agriculturist* circulating more thoroughly there, though it is already going that way pretty extensively. A few particulars will suffice here: Harris Brothers are noticed on page 344. J. D. Miller was shown up last month, and though not dead, is on the wane. J. D. Granger operates with the same circulars, sending letters pretending to have drawn \$130 to \$165 prizes for sundry people. The "prizes," like those of Miller, are shares in the "Sand River Prize Petroleum Company." The certificates for \$150 shares, more or less, are worth about one-twentieth part of one cent—for waste paper—and no more. All the Art Unions, the Soldiers' Unions, and other like Schemes, are no other than sheer lotteries, and dangerous to touch by any one who does not wish to gamble or throw his money away. No one of these has ever come up to its promises about drawing, etc. Usually when all the money is in, some one of the clique finds

it convenient to decamp with it, as at Milwaukee, for example. The Illustrated papers, and the respectable Daily and Weekly papers, are aiding in the swindles by publishing the advertisements. Pray do not be blindfolded by the array of names of bankers and other public persons, who are made to at least seem to favor these enterprises. They are springing up all over the country, but are all of a piece, villainous lotteries, dangerous because got up so plausibly, and so thoroughly sugar-coated. Our letters this month contain notices and circulars of 31 swindling parties and concerns, some of them already shown up, and others are the old parties under new names, but with the same circulars, etc. The most numerous circulars and tickets are from "Vincent, Willis & Co., Williamsburgh, N. Y." That is a large city, now united with Brooklyn, but its streets are systematically laid out and numbered. Why then did not V., W. & Co. tell people where they are to be found? It is bad for us, because a Pennsylvania friend has presented us with tickets for some magnificent prizes, all for \$2.50 each, an installment of 200 other lots, all sent "exclusively and privately" to persons in his town. Many others send us similar gifts.—Vincent, Willis & Co., you are myths—Humbugs!.....The European Pocket Time-keeper, and the "Silent Friend," are both gross humbugs. Julius Sinking and others, who offer these, should go into some honest business. Joseph T. Luman, and Madame Thornton, have both been already denounced, and those who advertise for them are helping them to victims among the ignorant and credulous. The following are Humbugs: "Grand National Gift Enterprise," N. Y. City.—"Errors of Youth" Recipe, N. Y. City.—"Great Closing Off Sale," do.—"Mutual Benefit Association," Quincy, Ind. Marcus Blair, Attorney, etc., of Oakland, Clinton Co., Ohio, who offers to lie \$500 prizes through for \$10 to \$50, and will lie to you.—Dr. Freeman.—"Perfume of Love."—"Essence of Life."—"Radical Regenerator."—"Metropolitan Jewelry Association."—"New Jewelry Association."—"Great National Gift Concert for Benefit of N. Y. Soldiers' Monument Association," J. L. Jaynes, Manager.—"\$5 to \$10 Sewing Machines," under several names: not worth receiving as a gift.—"Great Gift Concert for Soldiers' Monument," Sidney, Ohio, etc., etc., including some fifteen pretended sellers of splendid jewelry, valuable Watches, etc., by tickets for from \$1.75 to \$12. Every such concern in N. Y. is a Humbug! T. E. Bryan, of N. Y., is too good looking a man to be engaged in the disreputable, villainous business he is in, that of supplying obscene, disgusting books, pictures, and instruments, marked cards, loaded dice, etc. He is ashamed of the business, or afraid of it, as he tries to dodge the law by pretending to be only an agent; he refused us even a circular at his office, saying he had not there anything he offered, not even a circular to supply to us—a pretended country peddler. We would not like to trust any money in his hands by mail, as he requires it sent. Give all such disgusting circulars as he sends out, to ashes as soon as possible; they will soil your hands even. We stop here for a month, for want of room.

Documents Acknowledged.—Transactions of the Worcester Co. (Mass.) Horticultural Society, from Edward W. Lincoln, Sec'y....Address of Hon. Henry H. Crapo, before the Central Michigan Ag'l Society, at their Sheep-shearing Exhibition, Lansing, May 24, 1866. Report of the Northern Ohio and Lake Shore Grape Growers' Association: to be had of Allen Pope, Treas., Cleveland, O....Transactions of the California State Agricultural Society for 1864 and 1865, a volume of over 400 pages....Trans. Pennsylvania Horticultural Society for 1865....Trans. Columbia Co., Wis., Agricultural Society for 1865....Indiana State Horticultural Society, Transactions 1865-66....Catalogue of School of Mines, Columbia College, N. Y. City....Trans. Essex (Mass.) Agricultural Society for 1865.—The following dealers have sent us catalogues of Hardy Bulbs: Brill & Kumerle, Newark, N. J.; James Vick, Rochester, N. Y.; B. K. Bliss, Springfield, Mass.; J. M. Thorburn & Co., 15 John St., N. Y....Catalogues of General Nursery Stock from J. W. Hinks & Co., Bridgeport, Ct.; Faulkner Nurseries, Danville, N. Y.; J. C. Williams & Co.; F. Trowbridge, New Haven, Conn.; Dutchess Nurseries, Ferris & Caywood, Poughkeepsie, N. Y.; Parsons & Co., Flushing, N. Y.; Bloomington, Ill., F. K. Phoenix; Genesee Valley Nurseries, Rochester, N. Y.; Frost & Co.; Washington Nurseries, Geneva, N. Y.; Bronson, Graves & Selover....Grape Catalogues from C. W. Grant, Iona, near Peekskill, N. Y.; Humboldt Nurseries, Toledo, Ohio; Pomona's Home Nurseries, West Newton, Pa.; J. H. Foster, Jr.; Canandaigua (N. Y.) Propagating Establishment, F. L. Perry, Proprietor....Price Lists of Strawberries, etc., from Relsig & Hexamer, New Castle, Westchester Co., N. Y.; Francis Brill, Newark, N. J.; Willets Bros., Buchanan, Mich....Catalogues of Vegetable Seeds, Henry A. Dreer, Philadelphia, Penn.; Brill & Kumerle, Newark, N. J....Report of the California Assembly Committee on the Culture of the Grape Vine; Thirteenth Annual Report of the Ohio Pomological Society, 1866.

Cabbage Queries.—W. R. V., Elkton, (where?). An ounce of cabbage seed will usually give about 2000 plants. See notes for Kitchen Garden this month, and article on Management of Cold Frames in March last, page 90, for answers to other queries.

Tomato Seed.—"W. R. V." The pulp is usually allowed to ferment slightly, when it will wash. A girl puts the seed in a cloth, and washes the cloth with the enclosed seeds in soap suds. We have not tried this.

Tilden Tomato.—Either we have not the right sort around New York, or it is not suited to this locality, as our own, and those we have seen in a half dozen other places, have been in no respect equal to the old smooth red; not as early, no more dwarf, productive, solid, nor better flavored than that excellent old sort. Has it been over-estimated, or have we the wrong seed?

Large Cauliflower.—Mr. Randall H. Green, of Wickford, R. I., sends us a cauliflower that measures 47 inches around and weighs 11 lbs. It grew in the black soil of a reclaimed bog. Pretty good for Rhode Island—or any other State.

A Prompt Settlement.—The Niagara Fire Insurance Company of this city, paid their losses, \$70,000 and upward, within one week after the great fire in Portland, besides paying \$1000 toward the relief of uninsured sufferers. Such promptness will increase confidence in an excellent company.

The New England and Vermont Fair.—The New England Agricultural Society, with the Vermont State Society, held a fair at Brattleboro the first week in September, at which we were able to be present a short time. The weather was all that could be desired, the grounds in fine order, and the attendance large. The show was remarkable for its uniform excellence in almost all departments, and the New England farmers, breeders, and mechanics deserve great credit, almost all of the N. E. States being well represented. As a show of live stock, there has rarely been a superior exhibition in this country. All classes of sheep were represented in goodly numbers. Mutton sheep, especially the Cotswells and Southdowns, were very fine, but the great show was that of Merinos, as was to be expected, and in this class it is claimed that all previous exhibitions were eclipsed by both the number and value of the animals shown. In the various classes of neat stock the show was fine also, the Short-horns greatly preponderated, though there were animals of all the favorite breeds. Among horses, Thorough-breds, Morgans, Black-hawks, and Hamiltonians divided the honors given to breeding stock. The same blood told its story on the trotting course, Ethan Allen, now 19 years old, making his mile in 2 min. 38 sec.—the best time made. Specimens of most of the valued breeds of swine were on exhibition, and the show was regarded as creditable. There was also a good show of poultry. To the departments of industry we had not time to devote much attention, but from the crowd, have no doubt the multitudes were gratified and instructed. Gov. Andrew's able address was listened to on Friday by a great audience, surrounding the stand and filling the seats, which were said to accommodate 3000 people. Listening was painful, and hearing quite impossible for all within the sound (and who was not?) of the continual yelling, auctioneering, shouting and declaiming of the keepers of a great number of disgusting side-shows, snakes, big woman, big dogs, peddler wagons, gambling stands, and what not, which were allowed to fill up a good portion of the grounds. A shame and blot upon the otherwise good management of the fair.

New York State Fair.—The Fair of the N. Y. State Agricultural Society, was held this year at Saratoga, a location which offered great inducements so far as concerns the comfort of both visitors and exhibitors, in the excellent grounds of the County Society, and the abundant hotel accommodations of the city. The weather was prevalently good, the first and last days only being rainy, and the attendance on Thursday was very large, so that it is safe to say the expenses were paid, and perhaps a snug sum laid by against a rainy day. The show was a very large and interesting one in several departments. The Fairs of this Society have been always good in the department of farm machinery and implements of all kinds—but this has, in our view, exceeded all previous ones in this particular, both in variety and excellence of the articles. The show of swine was the best we ever saw in this country, or perhaps we should say, it was a show of the best swine, for the number of different breeds was not very great. The Jefferson Co. breeders were there in full force, most with excellent swine. The show of cattle was small, but very good, the herds of Messrs. Cornell, and Sheldon,

were represented by as good Short-horn cows as ever took the Society's prizes, and the Alderney's were in goodly number, and unexcelled in quality by any we have ever seen exhibited together: we can not specify particular animals now. The Ayrshire and Devon stock had each good representatives, so that on the whole, the cattle department presented a most instructive exhibition. In the sheep class, there was also a very instructive show. The American Merinos, worth from \$500 to \$1,500 each, were in strong force; the Silesian Merinos, in smaller number, but of great excellence; their grades also of the first and second crossing were shown, demonstrating the great improvement in the quality of the fleece thus produced on common flocks. There was a good show of most excellent Long-wools, and some Southdowns. The horse show was, on the whole, inferior to those of other years, and to what it should be. There was a very poor show of Dairy produce, and of fruits. The side-shows, whose name was legion, were kept outside. The management was excellent, and though many of the cattle and sheep, and horse-stalls were empty, yet, on the whole, the show was a very interesting and important one. The discussions held during the mornings were well kept up, and formed a valuable feature. There is much to interest a stranger in the town, and this visit to Saratoga Springs will be remembered with satisfaction by a great many people.

Awards of the N. Y. State Ag'l Society to Mowers, Reapers, Threshers, etc.

—The awards of the great fair at Auburn were announced at the N. Y. State Fair, as follows:

CLASS I.—*Mowers*, 18 entries.—The Gold Medal to the "Buckeye," Adriance, Platt & Co., New York.—2d Prize, \$25, to the "Clipper," R. H. Allen & Co., N. Y.

CLASS II.—*Reapers (Hand-rake)*, 2 entries.—The Gold Medal to the "Kirby," D. M. Osborne & Co., Auburn, N. Y.—2d Prize, \$25, C. Wheeler, Jr., Auburn, N. Y.

CLASS II½.—*Reapers (Self-rake)*, 5 compete.—Gold Medal to Seymour, Morgan & Allen, Brockport, N. Y.—2d Prize, \$25, to C. C. Bradley & Son, Syracuse, N. Y.

CLASS III.—*Combined Mowers and Reapers (Hand-rake)*, 7 compete.—Gold Medal to W. A. Wood, Hoosick Falls, N. Y.—2d Prize, \$25, to the "Eagle," E. F. Harrington, Rondout, N. Y.

CLASS IV.—*Combined Mowers and Reapers (Self-rake)*, 10 compete.—Gold Medal to the "Hubbard," Williams, Wallace & Co., Syracuse, N. Y.—2d Prize, \$25, Seymour, Morgan & Allen, Brockport, N. Y.

CLASS V.—*Combined (Hand and Self-rake)*, thrown out. CLASS VI.—*One-horse Mowers*.—Gold Medal to the "Clipper," R. H. Allen & Co., New York.

CLASS VII.—*Horse-Power Inclined Endless Chain*.—A Gold Medal to R. & M. Hardee, Cobleskill, N. Y.

CLASS VIII.—*Horse-Power Lever and Sweep*.—Dow & Fowler. Gold Medal recommended, [not awarded].

CLASS IX.—*Ten-Horse Thresher and Cleaner*.—Dow & Fowler, a premium recommended.

CLASS X.—*Two-horse Thresher and Cleaner Combined*.—Gold Medal recommended to R. & M. Hardee.

CLASS XIII.—*Horse Rakes*.—To Barker, Sheldon, & Co., Gold Medal, to A. B. Sprout, \$25. H. N. Tracy, and P. S. Carver, judged worthy of second premiums for Horse Rakes, with and without sulk attachments.

CLASS XIV.—*Hay Tedder*.—Herring's Tedder was judged worthy of a Gold Medal for the design, but it was refused because the workmanship was so inferior.

CLASS XV.—*Horse-Power Hay Forks*, 4 compete.—Gold Medal to J. Mansfield & Co., \$25 to Chapman, Hawley & Co., applicable to Barley and Oats. A 2d premium, is recommended for A. B. Sprout, for Harpoon Fork.

A New Grape Box.—Boxes for packing grapes are usually made of six pieces. We have been shown one patented by Smith & Doolittle, that is made of only three pieces. The ends are of pine, and the sides, bottom and top are made of one thin piece of white wood. This piece is cut part way through, so as to allow it to bend at the corners. That portion of the piece that forms the two sides and bottom is tacked to the ends, the top is about 2 inches wider than the box, and this portion lays over and fastens to the side. By taking the nails from this flap, the cover opens without splitting, and remains attached to the other side, as if it were hinged. The box is light and cheap, and if no fault is found in use, it will no doubt become popular with grape growers.

Blackberry Queries.—"Subscriber" complains that the new kinds of blackberries are too expensive to plant, and wishes to know if wild plants can be successfully transplanted, or shall he depend upon seed. All of the garden blackberries are accidental wild seedlings that have been taken up and propagated. Wild plants differ greatly in the size and shape of their fruit, as well as in productiveness and time of ripening. If "Subscriber" knows where to get wild plants, that in

their natural state have desirable qualities, they will be likely to do much better when put under cultivation. To put out a plantation of wild plants, taken at hap-hazard, would not be likely to be profitable. The matter of seedlings is one requiring some time and patience, and though some good sorts may be obtained, it will be much cheaper—if fruit is desired—to procure a few plants of varieties of known excellence and propagate from them. In good soil, blackberries multiply very rapidly—often too freely for convenience.

Manuring Orchards.—"Subscriber," Middletown, Mo. The best time to manure an orchard is just as the trees are making their growth in spring. It is usually more convenient to haul manure in winter when the ground is frozen, and there is more time for the work, hence it is frequently done at that time, though at some waste of manure.

Cooking Cauliflower.—"I. C. S.," DeKalb Co., Ind., is not acquainted with cauliflower, and wishes to know how to cook it. If friend S. does not know cauliflower, he has a pleasure in store. Cut the heads before they become loose, and boil in water slightly salted—never with meat. When tender, which will usually be with 20 minutes cooking, take up and drain and cover with drawn butter, (white sauce made with butter, flour and water,) and serve hot. They are usually eaten without other addition, but some dress with pepper and vinegar—the same as they do cabbage.

Cooking Egg Fruit.—Last month we gave our manner of cooking the fruit of the egg plant. Since then we have received several communications upon baking the vegetable. "Hawk eye," of Burlington, Iowa, says: "Cut longitudinally, like opening a water-melon, scrape out the contents of both halves, mix well with dry bread crumbs, season with pepper and salt, replace in the hollow rind, and bake well in a hot oven. Try it if you wish a treat." Others direct that the fruit be parboiled before it is opened.

Good Home-made Ink—Humburg Recipes.—W. H. Bull, West Springfield, Mass., writes us with a beautiful jet black ink which he says was made thus: Two ounces of Logwood and half an ounce of Bichromate of Potash were dissolved in one gallon of rain water and strained, and one-eighth ounce of ammonia then added.—The ingredients can be bought of any druggist for less than 50 cents (probably for 25 or 30 cents). So many others recommend this or a similar compound, and send such good specimens of the ink used, that it must be good.—If we had not so thoroughly exposed the humbugs as to make their business unprofitable, we might soon expect to hear of a dozen of them privately offering by circulars, to send a valuable and "immensely profitable" recipe for only a "\$V." and then forward this very ink recipe, printed on a large sheet and marked "Patent," or "Copyright" "applied for." In our many investigations among this class of swindlers, we have paid 25c. to \$5 for recipes, etc., that we had already published in the *American Agriculturist*.

Gardening for Profit in the Market and Home Garden, by Peter Henderson." A few months ago we announced a work on market gardening as being in preparation, but did not give the name of the author, as he preferred it should not be announced until he had completed his work. The manuscript is now in our hands, and the book will be brought out as soon as the necessary illustrations can be prepared. To answer numerous applications, we state that orders cannot be filled until late in autumn or early in winter. While the work is written more especially as a guide to market gardening, its teachings are also adapted to small operations, and it will be, as those familiar with the practical character of Mr. Henderson's writing might expect, just the book that its title indicates.

The Pew Hat Rack advertised in this paper is a very neat and simple contrivance for keeping one's "best hat" safe while attending church.

The Death of Prof. John A. Porter of Yale College took place at New Haven on the 25th of August. Prof. Porter was known to many of our readers as having filled the chair of Agricultural Chemistry in the Sheffield Scientific School for some time, and subsequently that of Organic Chemistry. That very interesting, and to those who participated in it, instructive convention of agriculturists, by whom the so-called "Yale Agricultural Lectures" were delivered and listened to, was carried through in great part by his efforts, and identified him with the cause of agricultural progress. The Sheffield Scientific School, now so liberally endowed, owes its success to Prof. Porter in a great degree.

Manure from the Breweries—Rag-weed.—"J. W. T.," of Elliot, Me., asks: "Will it pay to put hops and malt refuse from the breweries upon grass land at two cents a bushel? We have a field that is full of rag-weed. What will kill it out? Some of the ground was laid down three years ago, and it is full of it now."—The hops and malt manure will probably pay well. Compost it with loamy soil, sods or muck. It will heat quickly, and as soon as it becomes homogeneous, it may be applied. It is highly nitrogeous, and you must judge of its strength by the activity of the fermentation of the compost heap. The way to get rid of rag-weed (*Artemisia*) is to put on hoed crops, manuring well, and keep them well hoed, not letting a weed go to seed for two years, then seed down with a small grain crop. A strong sward will keep down rag-weed, but this needs a soil in good heart. The plant is an annual, and the seeds usually not long lived in the soil.

Oyster Shells or Oyster Shell Lime.

—Morris Moses asks, in which condition oyster shells are most valuable as a fertilizer, burnt or ground.—In the first place they are more cheaply reduced to a fine powder by burning than by grinding; 2d, the powder of the slaked lime is infinitely finer than the ground; 3d, the lime is a very active substance, producing immediate and marked results, for good, usually, for evil, if improperly applied; 4th, the ground shell is an inert substance, decomposing very gradually and producing no ill effects, and good ones only in case the ground lacks calcareous matter, except so far as 1 to 1½ per cent. of animal matter and a trace of phosphoric acid will go. Many soils need calcareous matter, and 5 pounds of slaked oyster shell lime will go much farther to supplying this for a crop or two, than 50 of ground shells.

Clover for Green Manure.

—G. J. Gilbertson, Mitchell Co., Iowa, asks: "In order to improve our dry sandy prairie land, I wish to sow clover; what kind shall I get, and when shall I sow it?"—Plow at once, giving the land a dressing of gypsum (three to five bushels per acre), and sow twelve pounds of large red clover seed of good quality on a March snow.

Plaster and Hen-dung Compost on Potatoes.

—Daniel Edwards, of Allegany Co., N. Y., writes: "G. H. Case planted half an acre of potatoes last spring on a sward of Timothy and wild grass, with no manure. After they were up, he put on 2 bushels of plaster and hen manure, equal parts, leaving two rows undressed in the middle of the field. The two rows have been yellow and of small growth; the others have a deep, rich, healthy green, and are twice as large as those undressed, and indicate double the quantity of potatoes that there would have been, but for the dressing. I am near 70 years old, and never saw such a contrast produced by any kind or quantity of manure."

Horse-racing—Agricultural Societies.

—The number of comments and complaints, not to say bewailings, over the prostitution of agricultural societies to the interests of horse jockeys is greater than usual, and shows either that the evil is growing worse, or that farmers are feeling it more. The fact is, that agricultural societies must be supported. Without the horse-races, which we dislike thoroughly, and consider demoralizing and only bad as generally conducted, the fairs too often do not pay expenses. The farmers have the thing all in their own hands; they may canvass the district before the annual meeting, elect officers who sympathize with their views, and then guarantee them the expenses and the premiums. In this way they will have the fairs to suit them. But will they do it? The farmers are slow, the horse-men are fast and free with their money. So they have things their own way, and the farmers may thank them, not themselves, that they have even \$10 offered for the best bull, and \$2 for the best mower and reaper. \$200 offered in merely agricultural prizes will hardly bring 50 people into the grounds, while for every dollar offered as a trotting prize, 50 people may seek entrance. This, unfortunately, is the way the thing works.

Sussex Co., N. J.

—The northernmost county in New Jersey is called *Sussex*, which might be wondered at in any State except New Jersey.—H. C. N. reports that, braving the scoffs of his neighbors, he introduced a corn planter this spring, with which he planted 6 acres a day, and also a horse corn plow with which he finishes each row at one plowing. So he saved himself fully half the labor of corn culture, and though the neighbors called them humbugs, the machines held their own. Old Sussex County is famous for milk and butter.

Questions not Answered.

—We do not wonder that many of our kind readers, who interest themselves for the *Agriculturist*, and who send us

questions, are disappointed at not seeing them answered, and it is but fair that we should occasionally explain. Our space is very far too small to allow us to give as much as 10 lines to each question. Often we are able to answer half a dozen in one. Frequently questions require study and investigation, which it is sometimes difficult to find time for before the season is passed for the current year. Then again there come questions which we can not well answer. Here, for instance, is one:

How to Make Sod Fence and Ditch.

—"How should a sod fence be built, or a ditch fence, or a sod fence and ditch?"—"J. B. C.," Montgomery Co., Iowa. This question we are happy to propound to our readers, and some "old country man" will probably have to answer. Turf or sod fences, with or without ditches, are common in Europe, especially in Ireland, but rare here.

Setting Fence Posts.

—"N. C." advises to set posts without preparation, but to apply "a large shovelful of wood ashes to each post just at the surface."

A Dumping Wagon Wanted.

"What is the best plan for a wagon, the body of which will tilt, to dump its contents like a cart?"

Leaky Tin Roof.

—"G. S. R." When a tin roof proves itself good for nothing from any cause, rip it off. The plastic slate roofing is coal tar, mixed with slate flour, ground very fine. It is said to make a good roof if applied on a good felt, or wrapping paper.

Roofing.

—"V. H. E.," and others. From our own examination, from what we hear, and from the nature of things, (but not from the rather extravagant statements made by the parties who have it for sale), we are inclined to think that the so-called "Plastic Slate Roofing" is equal to the best roof of its kind.

Sick Chickens.

—Mrs. "J. R. T.," of Flemingsburg, Fleming Co., Ky., is very much distressed about her fowls. She has lost 200 or more of her young chickens, and 25 or 30 hens, 75 young turkeys and several old ones. They droop a day or two, seem to have sore throats, and "the scours," then die. Of course we can only guess what may be the matter. We have known a similar trouble from fowls eating carrion and maggots, and would put them in a yard, feed softened grain, or better grain ground and scalded, mixed with fine charcoal, and wood ashes. We have checked scours by giving a wineglass of ale with 10 or 15 drops of paregoric to full-grown fowls; sop bread in the ale, and put it down their throats.

Marking Chickens.

—"Progress" says: "When I wish to mark chickens as I take them from the nest, I cut the web between the toes. As there are 3 toes on each foot, there are 4 places where you can have life-long marks on the fowls."

Witching or Switching for Water.

—"T. M. L."—The only result that usually comes from following the witch-hazle-switch indications of water, is, that people locate their wells in very inconvenient places. If a man digs a well deep enough, he usually gets water, whether the hazle switch indicates it or not. Still, people who mean to speak the truth, tell very marvellous stories, which we have no wish to dispute. Only we will say, when a writer like one in an esteemed contemporary runs mad in his philosophy, and makes electricity do more wonderful things than talk across the Atlantic, we must protest.

Cheese Factory in Columbia Co., N. Y.

—We recently visited a new cheese factory just erected at Rider's Mills, Columbia Co., N. Y. The building is 100x30 feet, two stories high, erected in a very substantial manner. It is calculated to work up the milk from 600 cows. The location is an admirable one both as regards conveniences for manufacture, and excellence of the surrounding pasture, from which the very choicest butter has long been derived. The enterprise is a new one in that section, but it will undoubtedly pay, as it is intended to establish an A No. 1 brand in market.

Will Roots Enter Cisterns?

—"Christopher," of Nantucket, asks, if the roots of grape vines planted near a brick cistern will interfere with it. They will not if the bricks are well laid in cement, and the cistern is water-tight to the top. Roots will penetrate a wall loosely laid, and do often go through common cellar walls, even though cement mortar may have been used, but they will not go where water cannot.

Cow with the Heaves.

—Wm. Wade, of Bristol, Ohio, has a cow which has had something very like the heaves in horses for 2 years. The heaves is similar to asthma, and we know no reason why cows should not have it now and then. If it is asthmatic in its

nature, it will be hard to cure, but probably may be alleviated by common heave remedies.

Sweet Potato Vines.

—Frank Parker asks, if it is absolutely necessary to lift the vines during the growing season. No. Neither is it absolutely necessary to raise sweet potatoes at all. The vines make roots throughout their entire length, and on these roots little potatoes will form, but never mature. On this account the vines are torn up from the ground, or cut off to stop their running now and then, and the strength then goes to perfecting the tubers in the hills.

Propagating Blackberries and Raspberries.

—M. Korff, Gray's Summit, Mo. These are propagated extensively from root cuttings. The roots are cut in pieces one or two inches long and planted in spring, with a slight bottom heat.

Beardless Barley.

—The beardless or bald barley does well in Canada, and that fact answers the question as to its bearing a northern latitude. The Nepal Barley is naked as well as bald.

How Much do People Weigh?

M. Queflet, of Brussels, Belgium, conceived the idea of ascertaining the average weight of people at different ages, with other items. To this end he weighed many thousands of persons of all ages and occupations, in different parts of Europe. The following is the result:
a.—Infants, at birth, vary from 2½ to 11 lbs.
b.—Infants, average weight 6½ lbs.
c.—Young men, at 20 years old, average, 143 lbs.
d.—Young women, at 20 years old, average, 129 lbs.
e.—Men weigh most at 35 years old, averaging 152 lbs.
f.—Women weigh most at 50 years old, averaging 139 lbs.
g.—Men and women together, at full growth, average 140 lbs.
* Boys, a little more; girls, a little less.

There is apparently some error in the last item, for with the average weight of men of full growth at 152 lbs., and of women at 139 lbs., the average weight of both taken together should be 145½ lbs. Probably the last figure refers to men and women of all ages taken together, for taking the given averages (c, d, e, f, above) the average is 140½ lbs., and allowing for the usual excess of females, the average of all would be reduced to about 140 lbs. It is noteworthy that men reach their greatest average weight at 35 years, and women not until 50 years of age. The figures refer to Europe; we think the average weight of women in the United States would fall below 129 lbs. at 20 years old, and 139 lbs. at 50 years.

Rats.

—The question how to get rid of rats meets with a ready answer from "J. C. F.," Litchfield Co., Ct. He says: "My method is to catch a rat, and dip him all but his head in red paint, and let him go. The rest do not like his looks and so leave the premises."

Preparing Sweet Corn.

—G. Manahan, Elkhart Co., Ind. The corn is boiled just enough to harden the "milk," and then cut from the cob and dried. A machine has been invented for cutting the corn from the cob, which will soon be advertised.

Curing Meats.

—"Massachusetts Hams" writes: "I cure and smoke 50,000 to 100,000 pieces per year, and know my business. Meat cured in pickle made of water is not as good, and only used because more profitable and less laborious. The flavor of cured meats depends mainly upon the kind of molasses used. The best temperature is 40°, frozen meat will not cure, and if above 50°, will be liable to taint. For 100 lbs. meat, take 8 lbs. salt, 1 quart best molasses or 2 lbs. sugar, ¼ lb. saltpeter, 2 ounces ground alum; mix and rub on the fleshy side of the meat placed in pans, so as to keep all the mixture; repeat the rubbing every three days, rubbing in thoroughly. For large pieces, and cold weather, 60 days will be required; if mild weather, 50 days, and 15 days less for small pieces. The skin and fat of hams should be cut clean from the face, as far down as the second joint, to allow the salt to enter. The recipe for keeping meat, viz., in ashes, given in September *Agriculturist*, is good. Smoking is of no benefit; it is only a quick way of drying. Most people would prefer drying without smoke. If you smoke, use only walnut or yellow birch wood, or mahogany saw-dust. Be sure your meat is well cooled off before salting; ten days after killing is better than ten hours."

Home-made Ink—Correction.

—In some of the first printed copies of August *Agriculturist*, one of the ink recipes was spoiled by the use of wrong letters in a word intended to be *Bichromate* of potash, which is an abundant material, found in most drug stores. Many others have recommended similar preparations, and sent us specimens of writing with the ink, most of which are very good. See page 294 (August).

The Raccoon or Coon.

The Raccoon is one of the most interesting of the native quadrupeds of the United States, and claims our attention in the three-fold character of friend, foe, and household pet. The great naturalist Linnæus classed it in the same genus with the bears, (*Ursus*), but naturalists have since separated the genus, of which several species, all American, are recognized. The coon is familiar to all American farmer folks; it is of about the size of a large cat, of a compact build; the entire soles of its feet are bare, and standing, it rests upon its feet from toes to heels, flat, like a bear, but in walking it goes upon its toes only, like a cat. Its coat is very thick, composed of a soft, grey fur, and long glossy hairs, which are marked alternately with black and greyish white. The color therefore varies, as the spectator looks into it or across it, and according to the light, giving it a peculiar richness. The face has a dark band across the eyes, and a dark stripe down the nose, which are set off by light grey surroundings. The tail, full and bushy, is marked by 5 or 6 very distinct dark rings. The coon is easily tamed and becomes very familiar; is characterized by playfulness, fondness of attention, and for doing mischief. It is an omnivorous creature, eating almost every thing, but being especially fond of sweet fruits, green corn, honey, nuts, shell fish, eggs, birds, insects, all kinds of grubs, worms, etc. In the spring it does the farmer no little service in destroying the grubs and other insects of his field, but in the autumn he takes his pay by eating all the green corn he wants when it is in the "roasting ear" state. The boys know exactly when, and after the coon hunt, whether successful or not, they never forget to take pay for their good deed, or for their good will, as the case may be, out of the nearest corn fields. The bushel or two of nice ears roasted in the ashes of the fires which lighted them and their dogs in dispatching the poor coon, is more than a whole family of coons would damage in the entire season.

The Raccoon has a curious habit, which gives it its specific name, *lotor*, or washer. The Germans call it *wasch-bär*, or washing bear, from this peculiarity. Whenever it can do so, it takes its food and dips it in water, waving it to and fro. Coons visit poultry yards sometimes, and the fact may be known by the 5-toed tracks, showing occasionally that of the whole hind foot, like a miniature human foot print.



RACCOON—*Procyon lotor*.

They eat off the heads of poultry, usually leaving their carcasses. Their habits are chiefly nocturnal, and they may be taken in box traps, steel traps, or by fall traps, baited with sweet apples, etc. In autumn they become very fat, and they hibernate in winter. Their flesh is like bear's meat, and quite agreeable, and their skins have considerable value in the fall, or winter.

and white or yellowish white, black preponderating, and the fur is long, soft, though coarse, and very glossy. The tail is long, and might, with propriety, be called a "switch tail" from the length of the hairs. The white and yellowish patches are disposed irregularly upon the head and back, and white hairs and spots may occur on any part of the body. They are persistent enemies of grubs, and insects. They eat

mice too, and display much skill in ferreting out mouse nests, for eating the young. They destroy the eggs of birds also, eat frogs and birds, and probably also snakes and snake's and turtle's eggs. If an occasional visit to the poultry yard puts them under the ban of the law, do not let the vengeance be extended to other than the guilty individuals. They are exceedingly peaceable, and mind their own business as well

as any animals we are acquainted with, but if it becomes necessary for them to defend themselves, their means of defence are so offensive and effectual, that neither man nor beast seeks a second encounter. There are two sacs, connected with secreting glands, which are filled with a yellowish oily fluid. These are situated beneath the tail, and by a muscular motion, the

fluid may be ejected with great force in a very fine stream to a distance of 15 or 20 feet, and with considerable accuracy of aim. This is not urine, as has been supposed. The effect of this nauseous fluid upon a dog or a man, is to cause gasping for breath, and effort to obtain fresh air by running in an opposite direction to the enemy. The stench can be removed from clothing by the action of the soil, when buried for some weeks, but this is apt to cause it to mold and rot.



SKUNK—*Mephitis chinga*.

The Skunk.

The North American skunk is called by naturalists, *Mephitis chinga*. It is a well known animal, and one with which many have a too intimate acquaintance. It is of about the size of the Raccoon, but with shorter legs, and a longer body in proportion. The head is small, the end of the narrow snout blunt; the color is black

These animals often take up their abodes in house cellars, or about the under-pinning of barns, etc., but cause no inconvenience if not disturbed. They are best dispatched by a well directed shot. The flesh is delicate, and esteemed by those who can overcome their natural repugnance to it. Skunks are nocturnal in their habits, and very numerous. Their skins are valuable in proportion to their size and amount of black.

AMERICAN AGRICULTURIST.

ORANGE JUDO & Co., Publishers, 11 Park Row, N. Y. City.

ANNUAL SUBSCRIPTION TERMS (always in advance): \$1.50 each for less than four copies: Four to nine copies, \$1.25 each: Ten to nineteen copies, \$1.00 each: Twenty copies and upwards, \$1 each. Papers are addressed to each name.

SEVENTY-FIVE

Excellent Premiums.

Something for Everybody.

A first-rate Opportunity to get Good and Desirable Things, without Expense, and benefit others at the same time.—Every thing offered is new, and of the best quality and make.

Look all through the List and Description of Articles.

An extraordinary subscription list, exceeding the entire circulation of more than twenty-five other similar journals, enables the Publishers of the *American Agriculturist* to supply a very large paper, one most extensively illustrated and expensively prepared with practical, reliable, condensed information, at a very low price. One office, one corps of Editors and chief business men, one set of engravings, one setting of type, etc., answer for 150,000 to 200,000 subscribers, in place of the thirty or forty establishments that would be required if this number of subscribers were divided into the average circulation of 5000 or less. This explains why the *Agriculturist* is furnished so cheaply—only a few cents a year to each subscriber above the cost of printing paper. All subscription money received (and usually more) is expended in getting up and supplying the paper to subscribers.

Again: The large circulation necessarily brings a large and valuable advertising patronage, which furnishes the publishers a satisfactory income, besides a margin to pay for good premiums to those who collect clubs of subscribers. Thus, more subscribers bring more advertising receipts, and these again furnish premiums for still more subscribers—a satisfactory thing all round.

Every Publisher, by commission or otherwise, pays (or ought to pay) those who take the trouble to collect large lists of subscribers, new or old. Of course, many send the names of friends or neighbors without premiums, because they believe the paper will benefit them.

To save time, correspondence, etc., we appoint no agents, but offer as pay for doing the work of an agent, a fine selection of such articles as are wanted, or have been called for, by our canvassers. Any one so disposed can select the premium desired, and raise the required number of subscribers. By Wholesale purchases, by advertising arrangements, etc., we can pay much more in premiums than in cash. Every article is given at the regular price which it would cost any purchaser.

Each article offered is for a definite number of subscribers; every one thus knows just what is required. A premium is not dependent upon favoritism, or upon what some unknown person elsewhere is doing.

Over Eight Thousand Persons have hitherto received our premiums with great satisfaction; we have not heard of one in a thousand who has not been highly pleased.—It is a good work. The tens of thousands of persons persuaded by our canvassers to take and read the paper, have been benefited by so doing.

It is much easier to raise a club and get a premium than most persons suppose before they try it. The paper speaks for itself, is very cheap, and there are at least two million people in the country who would be benefited by it much more than its cost.—Many persons canvass where they are known, as a business. They sell the premiums, and so secure large pay for their time. Thus, one getting 10 subscribers a day for 52 days (two months), or only 5 a day for $\frac{1}{2}$ of a year, secures a fine Steinway's Piano, to sell at \$625, at which price thousands are sold every year. And so of other articles of less value. Many have started to get one premium only, and before stopping have secured several.

Multitudes of Families have obtained some article wanted, by a little effort on the part of the man or woman, and often of a child. Clergymen have repeatedly secured the Cyclopaedia for their libraries by two or three days' work in raising a club of subscribers among their parishioners, who gladly help in such enterprises. Many congregations have clubbed together and secured a Sewing Machine, a Library, or a Tea Set, for their Pastor, or a Melodeon for the Church or Sunday School. Many Widows, and unfortunate persons, have been furnished with a good Sewing Machine by the efforts of a few individuals. Quite young Boys and Girls have, by their efforts at canvassing, obtained useful articles for those to whom they have been a great boon. Several Agricultural Societies have paid for a large club of subscribers, given away the subscriptions as prizes at their exhibitions, or supplied them to members, and sold the premium articles at auction for the benefit of the treasury. Scholars at school have joined their efforts and secured a Melodeon for their room, or some desired article as a gift to a Teacher. We put in the beautiful Ladies' Watches this year more especially for scholars, though any one can take them. Many gentlemen have secured premium sewing machines, etc., as presents to their companions at the holidays, or on a birthday. Our letter files contain a multitude of instances like the above. The Watches, Guns, etc., offered this year, will afford a capital chance to obtain valuable articles of these kinds.

We take so much pains to procure only good articles in all cases, that any one securing anything from our premium list, saves the risk usually run of getting poor or indifferent goods, when buying of unknown or irresponsible parties. Every thing we send out as a premium is guaranteed to be the best of its kind and price.

Our premiums are standard articles, and enough can be obtained to supply all calls for premiums for six months. Every canvasser can take abundant time, but

As fast as subscriptions are obtained, send them along, that the subscribers may begin to receive the paper; and when all the names that can be obtained are forwarded, select the premium, and it will be promptly furnished. To save mistakes and keeping accounts, send with each list of names, the exact subscription money (in Post Office money orders, drafts or checks on N. Y. City; or, if these can not be had, registered money letters.)

Every name designed for a premium list must be so marked WHEN sent in.

NOW is the best time to begin to raise a club, as every new subscriber for 1867, received in October, gets two months of this year free, as noted elsewhere.

Old and new subscribers count in premium lists, but a part should be new names, for it is to obtain such that the premiums are in part offered. Papers in Premium clubs need not all go to one Post Office. Of course the extra copy, usually offered to clubs of ten or twenty, will not be furnished when a premium is called for.

Specimen Numbers of the *Agriculturist*, Cards, and Showbills, as may be needed, will be supplied to Canvassers. These should be used carefully and economically, as each extra copy of the paper with postage (2c.), which must be pre-paid, costs about 12 cents.

Table of Premiums and Terms, For Volume 26.

Open to all—No Competition.

No.	Names of Premium Articles.	Price of Premiums.	Number of Subscribers required at \$1.50.
1—	Garden Seeds for a Family (40 kinds)	\$5.00	13
2—	Flower Seeds for a Family (100 kinds)	\$5.00	13
3—	Nursery Stock (Any kinds desired)	\$20.00	30
4—	Four Grape Vines (12 of No. 1)	\$18.00	27
5—	Concord Grape Vines (100 of No. 1)	\$12.00	19
6—	Japan Lilies (12 Bulbs)	\$8.00	15
7—	Sewing Machine (Wheeler & Wilson)	\$25.00	60
8—	Sewing Machine (Grover & Baker)	\$25.00	60
9—	Sewing Machine (Singer's Tailoring)	\$25.00	60
10—	Sewing Machine (Florence)	\$25.00	60
11—	Sewing Machine (Willcox & Gibbs)	\$25.00	60
12—	Sewing Machine (Holt's)	\$25.00	60
13—	Washing Machine (Dolby's)	\$14.00	21
14—	Clothes Wringer (Best—Universal)	\$10.00	18
15—	Tea Set (Hart's best Silver Plated)	\$50.00	66
16—	Castors and Fruit Basket (do. do.)	\$30.00	44
17—	Ice or Water Pitcher (do. do.)	\$18.00	27
18—	One Dozen Tea Spoons (do. do.)	\$8.50	17
19—	One Dozen Table Spoons (do. do.)	\$8.50	22
20—	One Dozen Dining Forks (do. do.)	\$8.50	22
21—	Piano (Best Steinway & Son's 7-octave)	\$625.00	520
22—	Melodeon (Best 4-octave)	\$112.00	138
23—	Melodeon (Best 4-octave)	\$67.00	78
24—	Ladies' Gold Watch (Beautiful)	\$30.00	46
25—	Silver Watch (Valuable Time Keeper)	\$30.00	46
26—	Double Barrel Gun (Very good)	\$30.00	43
27—	Spencer's Breach-loading Rifle (Hunting)	\$35.00	70
28—	Tool Chest (First Quality of Tools)	\$41.50	60
29—	Case of Mathematical Instruments	\$9.00	18
30—	Case of Mathematical Instruments	\$15.00	22
31—	Morton's Best No. 6 Gold Pen (Silver Case)	\$4.50	11
32—	Morton's Best No. 5 Gold Pen (Silver Case)	\$4.50	11
33—	Barometer (Woodruff's Mercurial)	\$12.00	27
34—	Barometer (Woodruff's Mercurial)	\$12.00	27
35—	Buckeye Mowing Machine, No. 2	\$125.00	150
36—	Allen's Patent Cylinder Pump, etc.	\$20.50	31
37—	The Aqueduct or Water Thrower	\$11.00	19
38—	American Cyclopaedia (Appleton's)	\$20.00	96
39—	Worcester's Great Illustrated Dictionary	\$12.00	19
40—	Any Back Volume <i>Agriculturist</i>	\$1.75	20
41—	Any Two Back Volumes do.	\$3.50	29
42—	Any Three do. do.	\$5.25	13
43—	Any Four do. do.	\$7.00	17
44—	Any Five do. do.	\$8.75	21
45—	Any Six do. do.	\$10.50	19
46—	Any Seven do. do.	\$12.25	21
47—	Any Eight do. do.	\$14.00	23
48—	Any Nine do. do.	\$15.75	25
49—	Any Ten do. do.	\$17.50	27
50—	Any Back Volume <i>Agriculturist</i>	\$1.75	20
51—	Any Two Back Volumes do.	\$3.50	29
52—	Any Three do. do.	\$5.25	13
53—	Any Four do. do.	\$7.00	17
54—	Any Five do. do.	\$8.75	21
55—	Any Six do. do.	\$10.50	19
56—	Any Seven do. do.	\$12.25	21
57—	Any Eight do. do.	\$14.00	23
58—	Any Nine do. do.	\$15.75	25
59—	Any Ten do. do.	\$17.50	27
60—	Genesee Farmer, 1858-1865, 3 Vols., Bound by	\$14.00	21
61—	Downing's Landscape Gardening	\$6.50	15
62—	Cummings & Miller's Architect	\$10.00	18
63—	A \$10 Library (Your Choice)	\$10.00	18
64—	A \$15 Library do.	\$15.00	21
65—	A \$20 Library do.	\$20.00	31
66—	A \$25 Library do.	\$25.00	38
67—	A \$30 Library do.	\$30.00	44
68—	A \$35 Library do.	\$35.00	50
69—	A \$40 Library do.	\$40.00	56
70—	A \$45 Library do.	\$45.00	62
71—	A \$50 Library do.	\$50.00	68
72—	A \$60 Library do.	\$60.00	80
73—	A \$75 Library do.	\$75.00	100
74—	A \$100 Library do.	\$100.00	125
75—	A Choice of Good Books (See Terms below)

Every article offered is new and of the very best manufacture. No charge is made for packing or boxing any of the articles in this Premium List. The forty-three Premiums, Nos. 1, 2, 6, and from 29 to 32, and from 40 to 75 inclusive, will each be delivered FREE of all charges, by mail or express, to the Post-Office or express office nearest recipient, to any place in the United States or Territories, excepting those reached only by the Overland Mail.—The other articles cost the recipient only the freight after leaving the manufactory of each, by any conveyance that may be specified.

Description of the Premiums.

No. 1—Garden Seeds.—A valuable selection of 40 varieties of the best seeds for a family garden, each parcel large enough for a garden of ordinary size. The seeds are all fresh and good, of this year's growth. This premium and the next are put up for us by Messrs. J. M. Thorburn & Co., 15 John-st., N. Y., whose seed establishment is well known as one of the oldest and best in the country. (We prefer procuring seeds of this good house because the nearest and most convenient to our office—otherwise we would gladly select also from such good houses as B. K. Bliss, James Vick, Henderson & Fleming, and other reliable parties whose advertisements we admit from time to time.)—This premium will be of great value and convenience to many, especially to those distant from good seed stores, as we shall send the seeds post-paid to each one, the postage law allowing us to send seed packages of 4 lbs. each, at a cost of 32 cents, to any part of the United States (except to those points reached only by the "Overland Mail.")—In many cases the recipient will have enough in each package for his own use, and a considerable quantity to spare to friends and neighbors, or to members of the club.

No. 2—Flower Seeds.—Like No. 1, this is a valuable as well as beautiful premium, wanted by thousands of persons. It consists of 100 different kinds of flower seeds, all in separate papers, and includes not

only the finer common varieties, but many of the newer and rarer kinds that are costly when bought by the single paper. Each parcel contains the usual amount sold by seed dealers. The parcels are all packed together and delivered free, the same as No. 1. This premium will give quite an assortment to each of the members of a club if the canvasser of the club chooses to distribute part.

No. 3—Nursery Stock—Plants, etc.

—This premium can be selected in *any thing desired*, from the Catalogues of Parsons & Co., Flushing, N. Y., at the East, or of F. K. Phoenix, Bloomington, Ill., at the West. Both are well-known, very reliable parties, having extensive Nurseries, Green-Houses, Ornamental Trees and Plants, Grape Vines, Shrubs, etc., etc. Send a stamp direct to either of them, for their regular catalogues, stating that it is to look into the value of this premium, and they will be furnished free. Any one choosing this premium, can select to the amount of \$20, or a larger amount proportioned to the names sent us, and we will send an Order for the amount on either party named above. None but the best articles will be furnished, and whatever is ordered will be well packed without expense and forwarded as freight, or by express, or otherwise, as directed by the recipient. This premium will be sent this fall, or in spring, as desired.

No. 4—Iona Grape Vines (12).—This valuable new variety has been often referred to in our reading columns, and is becoming so well known that we need not describe it here. None but No. 1 Vines will be sent. They will be forwarded by express either this fall or next spring, or by mail to distant points, if so desired, and postage is furnished.

No. 5—Concord Grape Vines (100.)—

"The Grape for the Million."—This excellent, hardy, early, prolific grape, is popular almost everywhere, and though not so high flavored as the Iona and Delaware, its easy culture, vigorous growth, earliness, and productiveness, make it one of the best for general cultivation, especially where it will receive little attention. It is now so abundant that we can offer a large number of No. 1 Vines. They will be sent by express well packed, in fall or spring, as noted above for the Iona Vines. This is a good Premium for a club. The canvasser can offer one to each subscriber, and still have 35 or 81 left for himself.

No. 6—Japan Lily Bulbs.—A most beautiful flower, one of the few flowering bulbs that do well even when planted early in spring. Most kinds of bulbs require to be planted early in autumn. One can easily multiply his stock after getting a few to start with. The full directions for culture are given in the *Agriculturist*. We send them post-paid by mail to any place in the United States and Territories (except via Overland mail). They go as safely as potatoes. They are furnished to us for this premium, by Francis Brill, Esq., of Newark, N. J., one of the largest cultivators of them.

Nos. 7, 8, 9, 10, 11, 12—Sewing

Machines.—We are glad to be able to offer this year a choice of the leading kinds of good Sewing Machines. (See list in the Table above.) They are all too well-known to require long specific descriptions. We can recommend any one and every one of them as of great value to every family not owning a machine already. Each of these six different machines has some peculiarities superior to the others. We have used them all at home during the last half dozen years, except the Tailoring Machine, and that we have watched carefully in the hands of tailors. One has been tried several months, and then another, and so round; and they are all so valuable that we prefer to recommend all, instead of in the slightest degree hindering the speedy introduction of this important household implement by even a comparative word of discredit to any one of them. We would not part with the last one of these, whichever it might be, and be without any Sewing Machine for \$500! Here are the reasons: The \$500 at 7 per cent. interest, would yield, less taxes, about \$32. Most families require at the lowest, four months of steady hand-sewing a year, costing, if all hired, not less than \$24 a month, board included, or \$96 a year. With a Sewing Machine a woman can certainly sew as much in one month as in four months by hand. Here is a clear saving of \$72, or of \$60 if you call the seamstress' work only \$20 a month, including board—leaving a net annual saving of \$30 to \$40 above the interest, while any good machine will wear a dozen years. Then a speechless and earless machine at work one month, is preferable to a live machine for four months. But far above this, and all questions of money saving, is that of health. The everlasting "Stitch, stitch, stitch," with form bended over the work, and the loss of sleep, have brought tens of thousands to early graves, broken down

millions more at an early age, and entailed an enfeebled constitution upon many millions of infants. We say to every man, get your wife a Sewing Machine, even if you have to sell a favorite horse, or an acre or two of land. A Sewing Machine costing \$55 to \$65, involves an interest of only \$3 or \$4 a year; it will, in the long run, save you five, if not a hundred fold, in Doctor's bills alone. Get the Sewing Machine any way. If you can get one through our premium list, well and good; it will help you, will enlarge our circulation, and benefit those you induce to read and think more; but get the machine. In previous years, a great number of premium machines have been secured for widow ladies, indigent tailors, and others, by the united efforts of a few persons in raising a club of subscribers. Several Post-masters have each obtained a machine for such an object. Many a wife has received from her companion a holiday or birthday present of a premium machine obtained from our office. Every machine given is boxed and delivered free to any railroad station, or express office, or other place in this city, and costs the recipient only the freight after leaving the city. They go safely as railroad freight. Full printed instructions go with each machine. Each of the machines is supplied with a Hemmer. Further particulars may be obtained by sending for circulars to:

Wheeler & Wilson Mfg Co., 654 Broadway, N. Y. City.
Grover & Baker Mfg Co., 493 Broadway, N. Y. City.
Florence Sewing Machine Co., 505 Broadway, N. Y. City.
Singer Manufacturing Co., 458 Broadway, N. Y. City.
Willcox & Gibbs Mfg Co., 503 Broadway, N. Y. City.
Howe Machine Company, 699 Broadway, N. Y. City.

The number of names required to obtain any one of these Machines, is given in our Table above.

No. 13—Washing Machines.

—For a long time we have annually tried half a dozen or more new Washing Machines. Some of them have promised well at first, but no one has continued in so much favor as the "Doty's Paragon," which we have now used nearly three years. It is the only one the "help" will use without being required to do so. Some new improvements have been added within the present year. It is neat and compact, and convenient. Full Descriptive circulars can be had of R. C. Browning, 32 Courtland-st., New York, or of the Metropolitan Washing Machine Co., Middlefield, Conn. The machine packs in small compass, and can be sent cheaply as freight or by express, as desired, to any part of the country.

No. 14—Clothes-Wringing Machine.

—A very useful, time-saving, strength-saving, clothes-saving implement, that should be in every family. The wringing of clothes by hand, is hard upon the hands, arms and chest, and the twisting stretches and breaks the fibres with lever power. With the Wringing Machine, the garments are passed between two elastic rollers which press the water out better than hand wringing, and with no wrenching of the fibres. It is done as fast as the left hand can pick up the garments, while the right hand turns the crank. It is so easily done that a child of 10 or 12 years can quickly wring out a tub-full of clothes, dropping them from the machine set upon the side of the wash-tub directly into a clothes basket, ready to hang out. We offer the family size, "Universal Wringer," provided with Cogs which make the rollers turn together, and which we consider essential to prevent injury to the fabrics, loosening of the rubber, etc. We used a single one of these Wringers, one of the first make, several years without any repairs, and with the greatest satisfaction.—It weighs only 15 lbs., and can be readily carried by hand, or sent by express, or freight, to any part of the country, ready to be set upon any form of tub, and used at once. We have given over a thousand of these as premiums, with almost universal satisfaction. At least a thousand families may get one this year as a premium.

No. 15—A Tea Set.

—This premium gave the greatest satisfaction last year. One person was so pleased with it that he raised a second club and obtained a second Set to present to a friend. There are six pieces, viz.: A Coffee Pot, two Tea Pots (one for Tea and one for Hot Water), a Creamer, Sugar and Slop Bowls—all of beautiful, uniform pattern, and new style, with raised and embossed figure work. They are to all appearance equal to the best solid silver, and for all practical purposes as valuable, though costing not one-fifth as much, at the present price of coin. They are not the common silver-washed articles, but the heaviest plate, known as "Sheffield Plate," the foundation being white metal, so as not to show, even when the heavy silver-coating may chance to be worn off in any spot by long hard usage.—These Sets are made by Lucius Hart & Sons, of Nos. 4 and 6 Burling Slip, N. Y. City. Mr. Hart, "the veteran Sunday School man," has been in the same place and business for nearly a quarter of a century. We have known him and his work for many years, and take pleasure in commending and guarantee-

ing its value to be as represented. The amount of silver on plated-ware depends wholly upon the will and integrity of the manufacturer. We could give nearly as good looking plated-ware for less than half the money, but it would not be worth a tenth part as much. The Sets given as premiums will be boxed without charge, and sent to any place by express or otherwise as desired. (See remarks under No. 20 below.)

No. 16—Castor, and Fruit or Cake

Basket, Combined.—This is a new pattern, both novel and beautiful. It can be used as a large showy Castor, with six cut glass bottles, or be instantly changed into a complete Castor, with Call Bell, and a separate Cake or Fruit Basket, with a colored glass dish inside. Every one receiving it will be delighted. It is from the same maker as No. 15, and of the same metal, plating, etc., and will be sent in the same way. Many cheaper and less beautiful Castors could be obtained, but desiring only the best things in our premium list we selected this.—We introduce this and Nos. 17, 18, and 19, at the earnest request of many of our premium canvassers last year.

No. 17—Ice or Water Pitcher.—A

large and ornamental article, just such as we recently selected for a wedding gift to a near friend, and then a duplicate for our own use. It is of the same metal, plating, etc., and by the same maker as No. 15. For 35 subscribers at \$1.50 each, we will add a round Salver of pattern to correspond (value \$6) or, for 47 subscribers, a large 16-inch oval Salver (value \$14), large enough for two goblets with the Pitcher. And for 53 subscribers, the Pitcher, large Salver, and a pair of beautiful Goblets, silver-plated without, and gilded within (value \$38). This complete Set is exceedingly desirable, though the Pitcher alone, or that and the smaller Tray or Salver, will answer a good purpose both for use and ornament.

No. 18—One Dozen Teaspoons.—

These are of fine pattern, "figured tips," and of the same metal, plating, etc., and from the same maker as No. 15. They are far cheaper than any thing we have found at half the price.

No. 19—One Dozen Table Spoons.

No. 20—One Dozen Table Forks.—

The same description and remarks apply to these as to No. 18. We select as premiums only such articles as we can warrant every way in quality and price. As we explained in Volume XXV, page 147, a silver dollar can, by the galvanic process be spread over many yards of surface so as to deceive the eye completely. Plated ware is valuable when we can trust to the honesty of the manufacturer to put on a coat of silver of given weight and thickness, and to do it on a good white metal. As all the work is the same, the thicker the coat, the cheaper the article in the end, provided we get the silver-plating we pay for, and this is the chief merit we claim for these premium articles, though a good deal is to be allowed for their beauty of form and workmanship.

No. 21—Steinway Piano: SEVEN-OC-

TAVE, ROSEWOOD CASE; LARGE FRONT, ROUND CORNERS, CARVED LEGS AND LVRE; OVER-STRUNG BASE, WITH PATENT AORAFFE TREBLE, AND CONTAINING ALL MODERN IMPROVEMENTS.—Regular and only price \$625. The finest premium ever offered! It is enough to say that it comes from the world-renowned establishment of Messrs. STEINWAY & SONS, Nos. 71 and 73 East 14th-st., N. Y. City, and is of their best make at this price. We have one of these instruments for our own use, and desire no better. And this premium is within the reach of a great number of persons. We expect to give six at least, from correspondence with previous premium canvassers, and will give fifty if called for. Only 520 subscribers are required to get one! This is only 10 a day for two months—or 5 a day for four months, while it will pay many persons for a year's steady canvassing. Why! a person could go to work and get this premium and sell it, and thus make high wages. Twenty young ladies at school, by gathering 20 subscribers each among their friends, can secure this premium as a present for a Teacher, or for a School or Society room. There are not a few young ladies wishing a first-class piano, who might well make it the year's business to raise a club and secure this premium. The personal effort would teach them business habits—to take care of themselves. There are more than 520 families in many single towns who would be benefited by the *Agriculturist*, and ought to take it, and would if brought to their notice. We aim at having this done, in offering such premiums. The premium club, however, is not confined to any one town, or P. O.—Railroad Conductors on local trains, can (as some have done) collect large lists of subscribers along their routes, and secure this premium and others.—Send to Messrs. Steinway & Sons for a free circular, describing this premium.

Nos. 22, 23—Melodeons.—These are excellent and desirable instruments, for the Home Circle, for small Churches, for Sunday Schools, for Day Schools, Academies, etc. Music is not only pleasing to the ear, but it exercises a healthful moral influence. Far better to give the children a Melodeon, and cultivate their finer feelings, than to leave them each an acre or two more of land. Instrumental and Vocal music in a school has a direct beneficial influence upon the pupils. We have seen the whole tone and character of the pupils of a school improved by the introduction of a Melodeon.—Set the pupils to work and they will raise a club of subscribers, and obtain this premium easier than they can get money subscribed for it. We offer Geo. A. Prince & Co's. Melodeons, for we know them to be good. A large one in our own Sunday School room has been in use for seven years, without a dollar's expense for tuning or repairs of any kind, and is to-day just as good as when first purchased, though used from time to time by a large number of persons.—Last year an unusual number of clergymen obtained this premium for themselves or their Churches, or Sunday School rooms. The premium clubs of subscribers were quickly raised among the members of their parishes.—But many others can get this premium for their own home use. We have given many of these instruments as premiums in the past few years, and we believe they have invariably been highly esteemed. Send a postage stamp to Geo. A. Prince & Co., Buffalo, N. Y., and get their illustrated descriptive circular, giving full particulars of forms, sizes, and prices. The premium Melodeons will be shipped direct from the manufactory at Buffalo, ready boxed for safe transportation by Railroad, Steamboat, or by Express, as may be ordered. They go just as safely by freight, as by express, and much cheaper, though not so quickly.

No. 24—Ladies' Gold Watches.—At the request of last year's canvassers, we add this and No. 25.—The Lady's Watch offered is one of the prettiest watches we have seen. It is in a "hunting" or closed case, beautifully engraved and inlaid with enamel, and is warranted a good time keeper by Messrs. Benedict Bros. (See No. 25, below.) This is a beautiful and appropriate present to a Teacher from the members of a School, who can easily divide among themselves the number of subscribers to be raised. It is also a very neat and beautiful gift for a companion. Not a few gentlemen can get this in time for a Holiday Present.

No. 25—A Good Watch.—For years past we have been urged to offer a good, reliable Watch, as a premium, and can now do so. We have arranged with Messrs. Benedict Brothers, of 171 Broadway, to supply us with two kinds at actual cost in gold—such watches as they will put in first-rate order and warrant. These Gentlemen we know to be every way upright and reliable men, governed in their dealings by Christian principles, and with their guarantee we unhesitatingly offer these premium articles with confidence. (As is generally known, Messrs. Benedict Brothers are entrusted with the keeping of the N. Y. City time, and they furnish time to a large number of Railroads and Steamers.) Every watch we send as a premium will be first thoroughly tested and put in running order by them, and warranted for one year.—No. 25 is in a plain hunting case of Coin Silver, and running work of excellent manufacture. This premium will give very many a chance to obtain a really valuable, reliable time piece, and at the cost of only a little effort.

No. 26—Double Barrel Gun: OR FOWLING PIECE.—Many subscribers have asked for such a premium, and we can now gratify them.—The guns offered are the genuine London "Twist" barrel, Patent Breech, Bar Lock, ebony ramrod, and every way a desirable piece for practical use. As a special favor they are furnished to us for this premium, by Messrs. Cooper & Pond, of 177 Broadway, know the world over as one of the most reliable and best houses in their line of business, and they highly recommend this particular gun, and guarantee it in every respect. It is from one of the oldest and most favorably known English manufacturers, and of a kind which Mr. Cooper assures us he has had so long, and found so good, that it is just the gun he should take if he were going out for a day's shooting. The price is not put on in fancy carving, and useless plating for show, but in the gun itself. We could get almost as good looking guns for half the sum, but we follow one general rule in this premium list, to offer only real, substantial, reliable articles, those cheap at the price named in our table. This premium includes the Gun, Powder Flask, Shot pouch, and Wad Cutter.

No. 27—Spencer Repeating Rifle.—If after chasing a Deer or Wolf all day, one gets a "crack" at him and fails, it is a consolation to be able

to try half a dozen more in as many seconds. If one meets a Bear face to face, he will send the first bullet with more precision, if he knows there are six more protests ready against an affectionate embrace. If within shooting distance of a herd of Buffaloes, seven chances at the fellows before they can scamper out of one's reach, while he is measuring out powder, would be quite agreeable; and so of any game to be brought down with a rifle only, seven shots in place of, and in the usual time of, one, is something desirable. And we may add, that a thief would be likely to give a wide berth to a house where he might be followed by half a dozen or more dangerous leaden policemen before he could have time to scale a rear fence.—Well, Premium 27, is one of Spencer's Repeating, Sporting or Hunting Rifles. It carries 7 charges inside of the stock, which are successively thrown into the barrel and fired, simply by pressing out the trigger guard, pulling it back, cocking and pulling the trigger itself. One can do all this, lying behind a log without rising to scare his game. The seven shots can be readily fired in less than half a minute, and then you have only to slip seven more ready made charges into the stock—in half the time you can load a common rifle once at the muzzle—to be ready to fire seven times more, and so on.—An exceedingly interesting statement of what this rifle has done during the war, and of what it is, and is capable of, may be obtained by addressing WARREN FISHER, Jr., Treasurer of Spencer Repeating Rifle Company, Tremont-street, Boston, Mass.—We have abundant evidence of the great range, power, accuracy, and durability of this Rifle, and we take pleasure in offering it as a premium for only 70 subscribers. Our premium includes the \$45 Rifle, and \$10 more for the Globe and Peep sights, including 100 rounds of prepared ammunition, boxing and shipping. These are the Company's cash prices. The addition of the Globe and Peep sight adapts the gun for the longest ranges, for sharp-shooting, etc. Each charge contains powder, conical ball, and fulminate, all in a copper case, and is water-proof. No ramrod, no cap, and little or no cleaning of the gun barrel is required.—The regular size is: bore or calibre, 44-100 of an inch; length of barrel, 26 inches. Any one preferring a length of 28 or 30 inches, can have it for \$1 or \$2 extra.

No. 28—Chest of Good Tools.—Good Tools, always at hand, will save a great deal of time in running after repairs, and save buying of many articles easily made at home. Most boys, having a chest of tools, will stay out of bad company, and in the use of the tools will acquire skill, ingenuity, and self-reliance. (For example, our plants have been guarded from insects this year by fifty families of Wrens which took up their abode in as many bird houses, all constructed by a boy of ten years, in his out of school hours, and these are but a small part of his work in this line. He has just the chest of tools which we have selected for this premium.) We wish every boy in the land could be supplied with such a chest, or even one with half the tools in it. If a boy has no "mechanical genius," there is all the more reason why his skill in this line should be cultivated by every possible means. We think any boy will be far more likely to succeed in after life, if he acquires ingenuity and tact; and these are partly cultivated by the use of tools in constructing various articles.—We once tried to furnish cheaper premium sets of tools, but gave it up in disgust after using one of them awhile, and hearing complaints from others of the inferior quality, because they were cheap. For the present year, we have, through the special favor and assistance of Messrs. PATTERSON BROTHERS, of 27 Park Row, arranged for a few chests of the very first quality of tools of the kinds and prices named below. The same kinds of tools could be purchased for about half the money, but these are all A No. 1, and can not be procured at any less price. They are for practical use, and worth a dozen common articles. For this we have the word and guarantee of Messrs. Patterson, which is amply sufficient for us, and for all who know them. They make up assortments of these, or any part of them that may be ordered of them, at the prices affixed, and any one can purchase of them what they desire. We make up only a single premium, which contains a full assortment for all common purposes. The tools are of regular size, and but few additions would be required for a journeyman Carpenter. We add a Soldering Iron, which is exceedingly useful about the house. With a little practice, any one can stop leaks in tinware, and do sundry other jobs of tinkering, that will soon save quite a large outlay, besides the loss of the use of a thing until it can be carried to a tinner, and waited for, or sent after a second time. The assortment of our premium is as follows: Plain chest, 31x16x16 inches, with sliding compartment box, \$7; Jack Plane, \$1.60; Smooth Plane, \$1.45; Jointer Plane, \$2.25; Hand Saw, 22 inches, \$1.75; Compass Saw, 10 inch, 70c.; Compasses, 6 inch, 60c.; Warner's Hammer (adz eye), \$1.50; Hammond's Hatchet, 55c.;

Drawing Knife, \$1.25; Try Square, 6 inch, 55c.; Bevel, 8 inch, 70c.; Chalk Line and Spool, 45c.; Mallet, 25c.; Pair of Pliers (pinchers), 35c.; Sliding Tongs (pinchers), 55c.; Calipers, 3 1/2 inch, 35c.; Brace, 65c.; Augur Bits for Braces, 1/2 inch, 25c.; 3/4 inch, 45c.; 5/8 inch, 72c.; Center Bits, 1/2 inch, 25c.; 3/4 inch, 35c.; 1 inch, 25c.; 1 1/4 inch, 35c.; 1 1/2 inch, 40c.; Six Glimlet Bits, assorted sizes, 90c.; Three Glimlets in Handles, assorted sizes, 35c.; Screw-driver Bit, 25c.; Flat Countersink Bit, 25c.; Rose do. do., 25c.; Small do. do., 25c.; Octagon Reamer, 30c.; Taper Bit, 50c.; 3-inch Screw-driver in Handle, 30c.; 6 inch do. do., 40c.; 5/8 inch Handled Gouge, 50c.; 1 1/2 inch do. do., 60c.; 1 inch Handled Chisel, 35c.; 1/2 inch do. do., 40c.; 1 inch do. do., 60c.; 1 1/4 inch do. do., 80c.; 3/4 inch heavy Framing Chisel, \$1.10; 1 inch do. do., \$1.25; 1 1/4 inch do. do., \$1.50; 3/4 inch Augur, 60c.; 1 inch do. do., 70c.; 2 inch do. do., \$1.30; Full set of Bradaws, \$1.35; Common 2 foot Measuring Rule, 30c.; File, 3-cornered, 20c.; do. do., 25c.; Flat File, 30c.; Wood Rasp, 50c.; Soldering Iron (copper), \$1.15; Solder, Nails, etc., \$1. Total \$44.50.—The Chest will be locked and sent by freight or otherwise, and the key sent by mail.

Nos. 29, 30—Mathematical Instruments, for Draughting, Drawing, etc.—Very convenient not only for Architects and Mechanics, but for farmers and others, and for Boys and Girls. These are neatly fitted in beautiful Rosewood Cases, having dividers with flexible joints, and points, semi-circles, pencil and penholders, rulers, etc., etc. All the pieces in No. 29, are finished in brass and steel; those in No. 30, are German Silver and steel. The pieces are the same in each, but No. 30 is of extra beauty and workmanship. They are useful in making drawings, plans of buildings, fields, etc. They are valuable to children, to cultivate a taste for, and habit of observing and sketching farms, plotting fields, orchards, buildings, for drawing, etc., etc. Such "playthings" not only keep them from "mischief," but develop their minds, and make them "handy." These premiums will be sent by mail, post-paid, to any place in the U. States and Territories.

Nos. 31, 32—Morton's Gold Pens: WITH EVER-POINTED PENCILS, IN EXTENSION COIN SILVER CASES.—Premium 31 contains Morton's best No. 5 Gold Pen; and No. 32, his best No. 6 Gold Pen. We have used many gold pens, and like those made by Mr. A. Morton, of No. 25 Maiden Lane, far better than any others we have ever tried. We have used no other for a long time past. No better gold pen is made. The No. 6 is considerably larger than No. 5, and on this account is preferable. We send them anywhere by mail, post-paid.—Those securing this premium should write whether they want a stiff or limber point, and what kind of writing they use it for most. If the flexibility in any case does not chance to suit the hand of the recipient, the pen, without the case, can be returned and exchanged for another, at a trifling expense for postage. Mr. Morton, as well as ourselves, desires every one receiving one of the pens to obtain a first-rate serviceable article.

Nos. 33, 34—Mercurial Barometers.—WOODRUFF'S PATENT, made by CHAS. WILDER, Peterboro, N. H. These are the most convenient and portable Mercurial Barometers made. (Send to Mr. Wilder, for a circular giving engravings and descriptions of the instruments.) The peculiar form of Mercury cup invented by Mr. Woodruff, renders these far more portable than any Mercurial Barometer previously known. They are so easily carried, that Mr. Wilder guarantees the safe delivery of every Barometer given by us as a Premium, if not to be sent beyond the Rocky Mountains. The instruments are beautifully made, are about 3 feet long, and are packed and sent direct from the factory, with no expense save the express charges. We offer two forms, which differ mainly in the style of case, both being supplied with Thermometer and Vernier. The \$18 form is of course more ornamental, and the more desirable instrument, though either of them is highly valuable.—There is no disputing the fact that a Barometer is often very useful to any one having occasion to desire to know when a storm or fair weather is to be looked for. The mercury generally rises or falls with the changes in the atmosphere, which precede a change in the weather.—A Barometer is to farmers, or others on land, what it is to sailors at sea—an indicator of the weather to be looked for. There are many times every year when the indications of the Barometer in regard to the weather will often be of more value than its whole price (e. g. in the safely housing of a crop before a storm), while the interest on its cost is hardly a dollar a year.—Many who have received this premium from us in former years, have given us definite statements touching its great value to them. Like all things human, it is not infallible, especially to those who have not learned to observe and study the exceptions to the standing rules; yet, as a general thing, its indications are reliable, and often greatly useful. For examples: This very day (Aug. 28), we made a short journey which a rain would have prevented, and we even left our umbrella at home, though the sky very strongly indicated

rain, and we found everybody in the cars carrying umbrellas. We relied upon our Barometer which had risen during the night. Again, early in August we had a field of oats cut, and the bundles were spread out to dry in the forenoon by the men, because the sky was clear. Glancing at the Barometer we found the mercury had fallen $\frac{1}{8}$ inch, and was still falling. The men were ordered to stack the oats up immediately. They did so, and just saved the grain from a long, soaking rain that continued several days.—Aside from its direct utility, the habit of observation, and of scientific study cultivated in children, where a Barometer is used, is important.

No. 35—Buckeye Mowing Machine.

—The gratification expressed by those who received this premium last year, and the request of others who wish to get it this year, lead us to continue it on the same terms. The Buckeye Mower is so widely and favorably known throughout the country, that we need not describe it particularly. Any one writing to the Manufacturers, Messrs. Adriance, Platt & Co., 165 Greenwich-st., N. Y. City, will receive a circular giving full descriptions, engravings, etc. The experience of last year showed that many a farmer can easily secure this premium by a very few days, or odd hours and evenings, canvassing for subscribers. A few can unite their efforts, each getting a part of the subscribers, and then own the machine in common, if they do not each need the full time of a mower.—It would pay a man well to canvass for this premium, and sell it afterward. Ten subscribers a day for 15 days would secure the premium, which sells regularly for \$125.—Many can, at town meetings, fairs, elections, and other gatherings, or during the evenings, secure this premium club without much if any loss of time.

No. 36—Cylinder Plow (Allen's Patent).

—We hear very good reports from those who received this premium last year.—In May, 1861, we described some highly successful trials made with it, alongside of other first-class plows. During the war, like most other good implements, this was not brought much before the public. It is named from the peculiar form of the mold-board. Several improvements have been made upon it within a year or two past. It is an Ohio invention, we believe, but is manufactured by R. H. Allen & Co., of 169 & 191 Water-st., New-York City, to whom application may be made for further description, etc. There are several sizes and prices, with a greater or less number of attachments. The kind we offer for premiums, is the "Two-horse size, cutting a furrow 12 to 14 inches wide, and 5 to 8 inches deep." It is also provided with wheel, and with a "skim plow," that is a smaller plow attached under the beam, like the double "Michigan plow."

No. 37.—The Aquarius: OR, WATER-TANOVER.—This is an excellent little portable hand force-pump, useful in many ways. One can take this instrument in his hand with a pail of water, and throw a considerable stream to a point where a fire may be breaking out, and do more to quench it, than he could with a dozen pailfuls dashed on, even if the fire could be reached. We have thrown water from the ground up against the third story windows of a house. The Aquarius is very useful for watering gardens, for washing windows, carriages, etc., etc. It is provided with rubber suction pipe, to draw water from a pail, tub or bucket, and an ejection pipe having both a nozzle for throwing a stream, and a rose or sprinkler. It has also an air chamber for giving a constant stream. It is a handy instrument for every household, aside from its use as a fire engine, with which many incipient fires have been stopped. Send to the manufacturers, Messrs. Wm. & B. Douglas, Middletown, Conn., for a descriptive circular, giving full particulars. The Aquarius packs into small space, and is readily sent by express or otherwise.

No. 38—American Cyclopaedia.—ARPLETON'S NEW.—We can hardly commend this great work too highly. We wish it could be placed in every family in the country. Several were fortunate in securing it through our premium list last year, and we hope many more will do so this. For example, a clergyman, in a small church on Staten Island, began to canvass among his people on Monday morning, and in less than four days he obtained subscribers enough to secure the Cyclopaedia—to the great benefit of himself and parishioners. Scholars at our Academies and Seminaries, and members of Library Associations, can easily unite their efforts and secure this important work for their Libraries. Many young men ought to devote their evenings and spare hours to canvassing, and obtain this magnificent and useful work for their own use. The Cyclopaedia is a whole Library of itself, consisting of sixteen very large octavo volumes, well bound, averaging 800 large

two-column pages in each book, or in the whole, 12,804 pages! They treat upon over 25,000 different subjects. It is hardly possible to name any subject, any country, any person of note, in past or recent time, concerning which pretty full information may not be found in the Cyclopaedia. It embraces every topic of human knowledge, alphabetically arranged for convenient reference.—"Cyclopaedia" means the whole circle of instruction or knowledge. This is called the American, to distinguish it from the similar comprehensive works published in England and France. The British Cyclopaedia, though less comprehensive, and not coming down to recent dates, costs more than twice as much as our better American Cyclopaedia. To get this premium is worth a year's effort in raising subscribers. The lowest price is \$50.

No. 39—The Great Dictionary.—

WORCESTER'S LARGE PICTORIAL, UNABRIDGED EDITION, containing 1854 three-column pages, with a multitude of illustrative engravings. (The work is 12 inches long, 10 inches wide, and nearly 4 inches thick, and weighs nearly 10 lbs.) Many of the most thoroughly educated men of the country consider this as far the best Dictionary in the English Language. It gives the spelling and pronunciation of every word in the language, with full explanations, and as a source of general information stands next to the Cyclopaedia. The Dictionary can be called for at our Office, or be sent by express or otherwise, to any part of the country. We have given away hundreds of copies as premiums, many of them obtained by quite young boys and girls. It should be in every family. It is published by Brewer & Tileston, Boston.

Nos. 40 to 49—Volumes of the

American Agriculturist (Unbound).—These amount to a large and valuable Library on all matters pertaining to the Farm, Garden, and Household, and contain more varied information on these subjects than can be obtained in books costing three times the money. We have stereotype plates from the Sixteenth to the Twenty-fourth Volume complete, and will have Vol. 25, soon after Dec. 1st. From these plates we print as needed. The price of the volumes is \$1.50 each, at the office, or \$1.75 if sent by mail, as they must be post paid. They are put up in clean numbers, with the Index to each volume.—They are profusely illustrated, the Engravings used in them having alone cost about Twenty Thousand Dollars! Those obtaining premiums for from one to nine volumes, can select any volumes desired, from XVI to XXV, inclusive. For ordinary use, the sets of numbers unbound will answer quite well.—Many hundreds of these volumes are taken every year as premiums.

Nos. 50 to 59—Bound Volumes of

Agriculturist.—These are the same as Nos. 40 to 49 above, but are neatly bound in uniform style, and cost extra for binding and postage. Sent post-paid.

No. 60—Genesee Farmer Volumes.

—As is generally known, we recently purchased the entire establishment of the *Genesee Farmer*, and united it with the *Agriculturist*, at the same time engaging the exclusive Editorial services of Mr. Harris. This was one of the best Agricultural papers in the country, which was an inducement to make the purchase. The back volumes of that journal contain much material of great practical value, including the first two years of the "Walks and Talks upon the Farm," now continued in the *Agriculturist* by Mr. Harris. We have stereotype plates and back volumes of the *Genesee Farmer* for eight years past, 1858 to 1865, inclusive. The price of these, sent post-paid by mail, is \$1.25 per volume, in numbers, or \$1.75 bound in half leather. We will forward the whole eight years' numbers, post-paid, to any one sending 15 subscribers to the *Agriculturist* at \$1.50 a year, or 58 at \$1.00 each; Or, we will send the Bound volumes for 21 subscribers at \$1.50; or, 70 at \$1.00 each.

No. 61—Downing's Landscape Gardening, and Rural Architecture.—This is a most beautiful Octavo volume, in extra binding, and will be an ornament to the best center table in the land, as well as be practically useful. It contains 108 fine engravings on Wood, Steel and Stone. It will be sent post-paid.

No. 62—Architecture: A NEW AND PRACTICAL WORK ON ARCHITECTURE, containing Designs for Street Fronts, Suburban Houses, and Cottages, etc., etc., giving in detail Designs and Working Drawings for both the exterior and interior of buildings; also a great variety of Details not in the Designs. It is 11 by 14 inches in size, and contains engravings of 352 Designs, and 714 Illustrations, that would separately cost Hundreds of Dollars. By Cummings & Miller. Sent post-paid.

Nos. 63 to 74—GOOD LIBRARIES.

—In these premiums, we offer a choice of Books, for the Farm, Garden, and Household. The person entitled to any one of the premiums 63 to 74, may select any books desired from the list below, to the amount of the premiums, and the books will be forwarded, paid through to the nearest Post Office, or Express office, as we may find it most convenient to send them. We need not enlarge upon these premiums: every one knows the value of good books. Twenty-five or Fifty dollars worth of books on subjects pertaining to the farm will give the boys new ideas, set them to thinking and observing, and thus enable them to make their heads help their hands. Any good book will, in the end, be of far more value to a youth, than to have an extra acre of land, on coming to maturity. The thinking, reasoning, observing man, will certainly make more off from 49 acres, than he would off from 50 acres without the mental ability which reading will give him.—Our premiums will enable many a family to secure a larger or smaller Library. This is a good opportunity for the farmers of a neighborhood to unite their efforts and get up an Agricultural Library for general use.

No. 75—General Book Premium.—

Any one not desiring the specific Book premiums, 63 to 74, on sending any number of names above 25, may select Books from the list below, to the amount of 10 cents for each subscriber sent at \$1: or to the amount of 30 cents for each name sent at the (ten) club price of \$1.20 each, or to the amount of 60 cents for each name at \$1.50. This offer is only for clubs of 25 or more. The books will be sent by mail or express, prepaid by us.

BOOKS FOR FARMERS and OTHERS.

[For sale at the Office of the *Agriculturist*, or they will be forwarded by mail, post-paid, on receipt of price. All these are included in Our Premiums 63 to 75 above.]

Allen's (L. F.) Rural Architecture.....	\$ 1 50
Allen's (H. L.) American Farm Book.....	1 50
Allen's Diseases of Domestic Animals.....	1 00
American Bird Fancier.....	30
American Rose Culturist.....	1 75
American Weeds and Useful Plants.....	1 50
Architecture, by Cummings & Miller.....	10 00
Burr's Vegetables.....	1 75
Bennet's Poultryer's Companion.....	2 00
Bennet's Rabbit Fancier.....	30
Breck's New Book of Flowers.....	1 75
Brist's Flower Garden Directory.....	1 00
Brist's Family Orchard and Garden.....	1 50
Burr's Vegetables of America.....	5 00
Chorlton's Grape-Grower's Guide.....	75
Cobbett's American Gardener.....	75
Cole's (S. W.) American Fruit Book.....	75
Cole's Veterinarian.....	75
Dadd's Modern Horse Doctor.....	1 50
Dadd's (Geo. H.) American Game Book.....	1 50
Dana's Muck Manual.....	1 25
Dog and Gun (Hooper's)..... paper, 30c., cloth.....	60
Downing's Country Houses.....	8 00
Downing's Landscape Gardening (new Edition).....	6 50
Downing's Fruits and Fruit Trees of America.....	8 00
Downing's Rural Essays.....	5 00
Eastwood on Cranberry.....	75
Elliott's Western Fruit Grower's Guide.....	1 50
Flax Culture.....	50
Field's (Thomas W.) Pear Culture.....	1 25
Flint's Milch Cows and Dairy Farming.....	2 50
French's Farm Drainage.....	1 50
Fuller's Grape Culturist.....	1 20
Fuller's Strawberry Culturist.....	1 20
Gray's How Plants Grow.....	1 25
Gray's Manual of Botany and Lessons in one Vol.....	4 00
Gleason on Milch Cows.....	75
Husmann's Grapes & Wine.....	1 50
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GROUP OF CHESTER COUNTY WHITE SWINE. (COPYRIGHT SECURED.) PROPERTY OF J. ROYD HEARD, ESQ. MORRISTOWN, N. J.—(See page 354.)

G. H. HAYES, S. F.

Really Valuable Hogs.

There is a large farmer living in New Jersey, whose habit it has been for many years to get his information by going after it himself. He is what New England folks call "*forehand-ed*"—that is, he always has or can make time to do what he wants to. If he wants to build a barn, he and his son go about and see barns, take measurements, study all the fixtures and conveniences, and take notes; then, when ready, they draw their plans and build. They do just so about other things. A while ago they wanted to renew their stock of hogs, and as they had long favored a large breed, they set to work to find what they wanted.

Without commending their judgment in preferring the Chester County breed, we give the results. On an adjoining page are portraits of several very handsome swine. They are of the so-called Chester White breed, and were selected by our friends after visiting every herd of note in the county, and others outside of it. They found such animals as they wanted, and bought them, paying any price asked, and even tempting breeders' best stock away from them with the all-powerful greenbacks. Therefore, we say, if there is any such thing as a Chester White breed, they have it—and our readers have a picture of as true a lot of Chester Co. hogs as there are in the country. The artist has had his own way, and made pictures which represent them as accurately as possible. Their legs are not trimmed down to suit any breeder's fancy—neither are their backs and bellies straightened and filled out, the heads and ears trimmed down, and all sorts of exaggeration employed to show them as somebody might think they ought to be, instead of as they are. The boar is 4½ months old, the sows 7, and the roaster, not a fortnight old, is the choice one of a recent farrowing of another sow, bought at the same time that the others were.

There appears to be two rather distinct kinds of hogs which go by the name of Chester Whites, and these have been mixed considerably, so that important characteristics of the hogs are not fixed. They are all large, but do not all grow to extraordinary size—nor have they all precisely the same shape. The ears of some lop forward, others incline outward, others still, stand up straight and pointed. Some ears are soft and silky, others fleshy and coarse. All these things indicate a lack of good breeding, which prevents these swine being recognized as a true breed. They have many good points, however; they are large, small boned, quick maturing, easy feeding, and well coated, but to compare them for persistently uniform characters with the Berkshire, Essex, Chinese or Suffolk breeds, is preposterous. The hogs which we picture are by no means fat, but simply in good breeding order, yet when we saw them a few days since, they struck us as so even and well-formed—so broad on the back, especially in the loins and shoulders, and so good all over that we wanted our artist to make a picture of them for their beauty, aside from the fact that they represent the choice of the Chester County herds. The dressed weight of 7 pigs 7 months old, of the same breed, all of one litter, killed last year by the owner of these, was respectively as follows: 238, 258, 237, 243, 283, 310, 240 lbs., which is considerably more than one pound for each day of their lives, (in one case over 1½ pounds. The same is true of some hogs 15 to 18 months old, killed at the same time, minutes of the weights of which we have mislaid.

Walks and Talks on the Farm.—No. 34.

What cold wet weather we are having! Corn is at a stand-still, and unless we have more sunshine the ears will be small. My corn is drilled, and I suppose will suffer more than that planted in hills—though so far, I think it is as good as most fields in this neighborhood. At all events, if we have no frost, I shall have plenty of fodder. The second growth of clover is splendid, and the prospect now is, that we shall have a great yield of seed. I plastered part of the clover on the second of June. We sowed it with a broadcast plaster drill. The clover was knee high, and when we had sown about eight acres, there came up a shower and the wet clover reached to the drill and clogged it, and we had to stop in the middle of the field. I could not see any marked effect of the plaster on the first crop, probably because it was sown so late—though there are those who think plaster does most good when sown on the leaves. But now, on the second growth of clover, you can see to an inch how far the plaster was sown. You can see it the whole length of the field, and also on the half breadth sown till the drill stopped. Nothing could be more distinct. There is of course danger of getting too large a growth. The seed may not mature. But I can hardly bring myself to believe that it is possible to make land on this farm too rich for any crop. I understood that one of my neighbors, when he heard last year that I was seeding down my wheat with clover, and that I had been obliged to pay \$17 a bushel for the seed, remarked "Well, he may sow it, but he will get no clover. That field never has raised any clover and it never will. It is run to death." But I had as good a crop on the whole field as I could desire, with the exception of about an acre. This was poor, and is comparatively poor now, though the difference is not so striking on the second crop as on the first. I believe I told you before why this was. When I bought the farm, three years ago, 14 acres of the field was in corn, and 18 acres in clover, so called—but there were far more thistles than clover. Well, the following spring I sowed the corn land to barley, and broke up the clover sod and sowed part of it with peas, and planted three acres with potatoes. The potatoes were manured with ammoniated Pacific guano, and gave me 200 bushels per acre. The peas had also some guano and plaster, and also part of them superphosphate; the barley had part bone dust and part superphosphate, and other artificial manures. An acre or so, in the barley and in the peas, had no manure of any kind. It is this land that gave such a poor growth of clover. And recollect it is two years ago last spring since the manures were used. The barley was sown late, and only yielded about 12 bushels per acre, and was of such poor quality that the maltsters would not buy it. The peas were a little better, but still very poor. The potatoes were good. The barley and pea land was sown to wheat, and produced a little over 15 bushels per acre. The potato land was sown with barley, and received another slight dressing of artificial manure, and gave a fair yield, and nothing more than fair—but the clover on this part is superb. "The husbandman waiteth for the precious fruit of the earth, and hath long patience for it." I have unbounded faith in good culture and manure, but my first two years' experience on this farm tried it sorely. But this year I feel quite encouraged. My crops are good.

The barley on the five acres of wet land that I under-drained, turned out better than I expect-

ed. When we were getting ready for "the threshers," William asked me where the barley was to be put. I told him we would put it in such a bin. "It will not hold it." I told him I thought it would. He has been on the farm six or eight years, and knew the size of the bin. "How much barley do you think you will have?" he asked. "I think we shall have a little over 20 bushels per acre." "Thomas and I," he said, "think this five acres in the bay will go 40 bushels per acre." "I told him he was as wild as a hawk; that I would bet him a hat it did not go thirty." Well, we commenced threshing, and soon had a hundred bushels in the bin, and then fifty more. "Two hundred" was the next report, and still the bottom not reached. "Two twenty," and considerable excitement in the barn. "Two thirty," hurrah! "Two forty." Clean up the floor. Whoa. "How much?" "Two forty-five. Forty-nine bushels per acre, and I don't believe there is over four and a half acres in the field!"

So much for under-draining, and the free use of the cultivator among the corn. About an acre of the field had a heavy dressing of superphosphate last year for corn. I could not see that it benefited the corn in the least. It was sown broadcast with a machine after the corn was up. I have usually applied it in the hill. But it is clear to my mind that superphosphate and other artificial manures, do comparatively little good on Indian corn in this section. I think one reason for this is that corn delights in a soil abounding in organic matter. Artificial manures do not supply this, while barn yard manure, peat, clover, and grass sod, furnish it in considerable quantity. Wheat and barley do not seem to need it so much as corn. Hence artificial manures should be applied to these crops rather than to corn. Put the barn yard manure on the corn land, either on the grass the previous year, or directly to the crop, as most convenient. Then, if artificial manures are needed, apply them to the following barley crop, with a little more on the wheat. This will give as good a crop of corn, barley and wheat, and the clover sown with the wheat will get the benefit of what remains in the soil. I should expect as heavy clover as could grow. My young clover, where I applied superphosphate and Lawes' wheat manure to the wheat last fall, is a splendid color, and promises a great growth. And in renovating a farm, the first aim should be to get good crops of clover. Make sure of the clover, and you are sure of every other crop.

"You have great confidence in artificial manures?" Yes, provided they are good and can be obtained at reasonable rates. But I have still greater confidence in thorough tillage. Or, perhaps, it would be better to say that both should go together to get the best results. And make and use all the barn yard manure you can in addition—and be sure to make it as rich as you can by feeding the animals well, and preserving the manure from leaching. There is far greater loss from leaching than from evaporation. Many farmers let half the value of their manure run into the nearest ditch. If the barn yard is properly constructed, the buildings spouted, and you have the requisite number of open sheds for the stock, and then keep the yard well littered, there is no danger of loss either from leaching or evaporation.

Some time ago I read in an English paper an anecdote of a President of a County Agricultural Society. "At the last Annual Meeting," said he, "you awarded me a white hat for the dirtiest barn yard in the county. I have worn it a year, but I think Mr. Blank's yard is now

worse than mine;" and to the great amusement of the audience, he handed Mr. B. the hat.

For the first two years I should have stood a chance of getting the hat in Monroe County. And yet a dirty barn yard is my abhorrence. But I had no straw, and how can you have a clean yard, clean pig pens, and clean stables without straw? A year ago last spring I had to buy straw and draw it five miles to litter my horses. But the next harvest brought the long-looking for abundance, and I used it freely, but still had a large stock left over this spring. "Mr. S. and I have just been talking about your having so much straw on hand," said one of the best farmers in this section, as he rode past from the city. "I always like to work it up in some way during the winter." He is a man whose opinion I value highly, and I took the reproof meekly. Of course I could have spread it about the yards and trod it into manure. But I now find that I blundered into a far better practice, and I shall always endeavor in future to have a good stock on hand for litter, during wet weather in summer and early autumn. The cows stay in the yards at night, and by keeping them well littered it is perfectly astonishing how much manure is made. I really believe they make more than during the winter, when they are in the yards and stables all the time. Then, how much pleasanter it is to milk in such a yard, and how much more comfortable the cows are! When you have once got a good bed, it requires fresh litter but seldom. The pigs root it up and it soon dries, and by spreading this over the yard, it can be kept clean without much trouble.

But I probably should not make so much manure if I did not slop my cows. I was telling you sometime ago that I wanted to slop them, but could not do it, because we had no conveniences for feeding them. Where cows are milked in the yard you cannot feed them with a pail, as they will frequently pull it over, and in any case the other cows would disturb them. My cow stable has no space in front of the cows where you can carry the food to them, and we should have to carry the pail of slops between the cows. Both cows would try to get at the pail, and the harsh tones of the man, to say nothing of the occasional kicks in the mouth, would go far to counteract the benefit of feeding. But during the "heated term" my cows fell off from nearly 80 lbs. of butter a week to less than 60 lbs., and when cows once fall off in their milk, it is not easy to bring them up again. But I thought I would see what could be done.

We got a large trough, made of two-inch plank, that will hold forty or fifty pails of water. We set this under the pump in the yard, so that the cows can stand all around it. Into this trough, which is about two feet deep, we put a bushel of corn meal, and then pump in some water and stir up the meal. This should be done in the morning as soon as the cows are turned out to pasture, in order that the meal may have time to soak. Of course it is not necessary to fill up the trough till the cows are brought up in the evening, when they will like it all the better in hot weather if cold and fresh. When the cows get to the barn yard there is a race for the meal trough. And though they come fresh from water in the field, it is astonishing how much meal-water they will drink.

The weak spot in the arrangement is this: After the cows have drank the water, and they can get at the meal, the master cows will keep away the others, and eat the whole. The remedy for this is simply to have the trough large enough to hold more water than they can drink

during the night, and to fill it full the last thing in the evening, and pump in more, if necessary, the first thing in the morning. I keep a good many pigs, and feed them more or less corn meal all through the summer. The meal that is in the bottom of the cow-trough we take out before it gets sour, and throw it into the pig-cistern, so that we can, without loss, put a good deal more meal in the cow-trough than the cows actually eat, as it is all fed to the pigs, and is improved by the soaking. The only difference between this way of feeding meal, and the ordinary mode of giving them slops in a pail, is, that in the latter case the cows eat the whole of the meal, while in the former they get only the soluble portion and that held in suspension—and they are allowed all they can drink.

But, as I said before, the water must never be allowed to get so low that the cows can reach the meal. If you attend to it yourself, night and morning, this is an easy matter, but no ordinary farm man that I have yet met with can get the idea through his head, short of a month or six weeks. I attended to it myself for the first week, and all went right, but one Saturday night, not feeling well, I did not go to the yard, and the next morning I did not get there until they were just through milking. Sure enough the cows had got down to the meal, and two or three of the master cows were gorging themselves with it, while three men, the assembled wisdom of the farm, stood looking on. But see to it yourself for a month or two, until it becomes a matter of daily routine, and then you can trust it to any careful man.

Instead of corn-meal I am now feeding peas. Like all peas raised in this section, they are full of bugs, or rather of the grubs that produce the bugs. But if fed out soon after harvest, and before the grubs become bugs, they do little or no harm. But, at this season, the peas are not dry enough to grind up fine. The better plan is to put them to soak over night, and then boil them. They boil up quite soft in a couple or three hours, and can be mashed easily, making as nice "peas pudding" as can be desired. We have a steamer, and cook a barrel at a time. Last night I put a barrelful in the cow-trough, with say forty pails of water, and you would be astonished, or at least I was, to find what splendid pea soup it made. It was too strong, to allow the cows to have all they wanted, while the same quantity of corn-meal (uncooked) would have given only a very weak solution.

John Johnston writes me, that his Diehl wheat that he got last year from Indiana, gave him 105 bushels by weight from 3 bushels and 27 lbs. seed, on a little less than three acres of land—say 35 bushels per acre. Not bad for this season. His Witter wheat went over 33 bushels per acre, on land from which he had a crop of barley last year of over 40 bushels per acre. The Diehl wheat is a handsome white variety, and bids fair to prove a valuable acquisition.

Mr. J. threshes his wheat as he draws it from the field. Had I done so this year, it would have been greatly to my advantage, as the heavy rains damaged the top of the stack considerably. Had I postponed threshing a few days longer, the loss would have been very great. Johnston's plan is to thresh outside and put the straw in the barn.

Some of my potatoes on the low land are commencing to rot. I shall dig them as soon as they are ripe and feed all that are specked

with disease to the pigs. It used to be said in England that diseased potatoes, when cooked and allowed to ferment, would fatten a hog quicker than sound ones. And it is not improbable. I can see how the starch might be changed into sugar, and this by fermentation into alcohol. And without discussing the question whether alcohol is a food or a poison, it is a well known fact that a little favors the accumulation of fat. "Hog feed should be allowed to get sour," is an old agricultural precept. I presume it is not the acid that is beneficial, but the other products of fermentation which accompany the formation of acid. The "whiskey" produced by allowing corn meal to ferment, may check the growth of pigs, but increase their tendency to lay on fat. But will the pork be as good?

During the recent cold, wet weather in August, my young pigs did not thrive. I let them run in the barn-yard, and in the barley and pea stubble, and they had all the slops from the dairy they could eat, with a little corn meal mixed with it. I could not think what was the matter with them. But since the weather has become warmer, they begin to improve, and I have no doubt if I had kept them shut up in a warm pen during those chilly nights, they would have done much better. Pigs are very sensitive to changes in the weather, and cold affects them seriously. Unless you have warm pens, and perhaps give warm food, it is not profitable to fat hogs, so far as the accumulation of fat is concerned, much later than the first or second week in November. But of course it is desirable where hogs are fattened for market, to keep them until we have cold weather, as better prices are obtained from eastern packing establishments.

Last spring I planted my potatoes with Ives' Potato Planter. It is set to plant the potatoes in drills $3\frac{1}{2}$ feet apart, and to drop a set in the drill about every eighteen inches. I think with nearly all varieties, except the Peach-blow, a foot or fifteen inches would be better. With Nevin's Potato Planter the eyes only of the potato are used. They are gouged out, and the potatoes can afterwards be used for stock. The "sets" are but little larger than corn. These sets are drilled along the rows just as you would drill grain. I have seen a crop raised in this way that was, to say the least, as good as if whole tubers or ordinary sets had been planted, and the ground was remarkably clean, although nothing but the horse hoe had been used. Still, on the whole, I prefer to plant larger sets. If the potatoes are assorted, I believe Ives' planter will drop them as well as it is ordinarily done by hand, and it will plant five or six acres a day. It marks out the land, makes its drills, cuts, drops and covers the potatoes at one operation.

One of the Dutchmen who works for me occasionally was telling me to-day that he has just sold his cow. A farmer who wanted a cow, hearing this one was for sale, came to look at her and milked her. "She gave a pailful," said Jake, "and he handed over the money (\$65) in a wink." I told him that I would have given that for the cow. "She was old," he said, "and the milk was very poor. He only got two pounds of butter a week from her." Still I would have bought her. The cow ran in the road, and had nothing but what she could pick up. I would like to have tried her with a liberal diet of pea-soup. It is easier to increase the quality of milk than the quantity. A cow that gives a pail of milk twice a day, will make a pound of butter a day, if she has sufficient good food.*

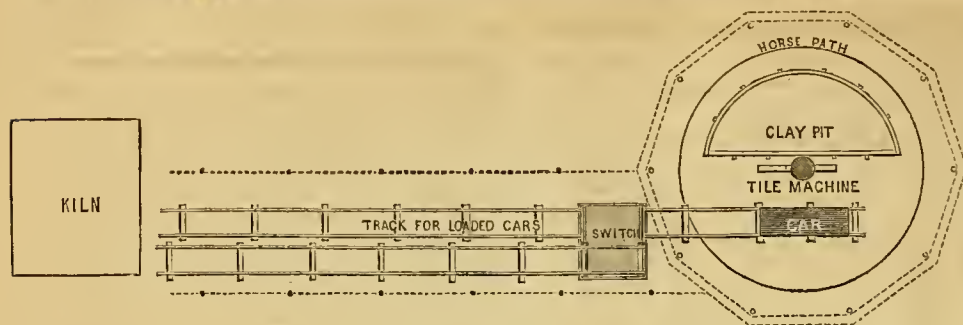


Fig. 1.—GROUND PLAN OF DRAIN TILE WORKS.

The Manufacture of Drain Tiles.

The demand for tiles for under-draining has increased every year since the early experiments in "burying crockery" were tried in this country—about 18 or 20 years ago—and it ought still to increase until every neighborhood is easily and cheaply supplied. The expense of starting a tile works is not great, and there is no mystery or secret about it. Tile makers, as might be expected, are not very communicative, under the mistaken notion that an increase in tile manufacture would hurt their trade. The contrary will be true. Were there ten times as many made and used, the steady demand, and the activity of their trade would more than compensate for a somewhat decreased price. Mr. J. W. Penfield, of Wiloughby, Ohio, has, at our request, prepared with considerable minuteness a description of his tile works, and of his processes. The sub-

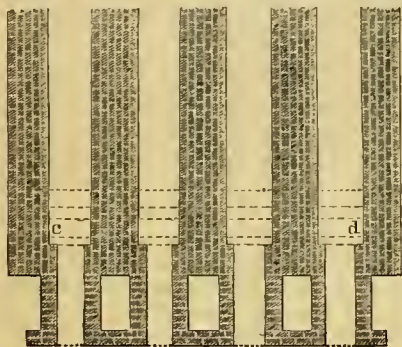


Fig. 2.—GROUND PLAN OF KILN.

ject is too extensive for a single article, and this one will be followed by another. Mr. P. writes:

"*Clay for Tiles.*—Although tiles can be made of inferior clay, or such clay as many brick-makers use, yet it is very desirable to have the kind *best* adapted to the business. Such clay is known by the smooth, elastic manner with which it moulds, and the rapidity with which it can be dried without cracking. It is very seldom that clay is used for tiles that would be improved by the use of sand. Too much sand in clay makes it brittle, causes the tiles to run rough, and increases the difficulty of making large ones. The purer clay is, the better; much coarse sand, or vegetable matter, is always objectionable; black muck or loam is sure to make trouble in drying, as it causes the tiles to shrink too much and to crack. The roots of grass and other plants are sometimes troublesome. Some clays are hard to soak, being filled with dry lumps, and for this, exposure to frost and wet through the winter, is a cure. This promotes also the decay of the roots. Clay a little inclined to be sandy, should never be dug to freeze. Tenness, toughness, elasticity and smoothness, are the most essential qualities of good clay, and such clay may generally be

found in all localities where there is much wet land. It is moisture that makes the particles of clay adhere; the amount required for different kinds of clay can only be determined by experience in using. When taken from moist beds in a rainy season, it frequently requires no additional water. Blue clay that has much sand in it should be worked comparatively dry, as in grinding it becomes softer; while as to close, fine, yellow clay, the more it is worked the dryer it gets. It improves any clay that needs moisture to soak twelve hours before moulding, and if dry when dug, this is positively necessary. A little experience in soaking clay, will enable any one to do it correctly; it is better to get it too soft at first, than too dry. Stony clay can not be used successfully, as stones interfere with moulding or fill the screen rapidly. Stones may be crushed with rollers, but the same expense would make tiles of good clay. Occasional stones $\frac{1}{2}$ an inch in diameter or less, will make but little trouble; larger ones will. When three or four such can be found in a shovelful of clay, larger ones will be found. Many attempts have been made to use stony clay for tiles, but in every instance I know of, the cost exceeds that of clean clay. A little time spent in looking for good clay will be well rewarded in almost any township.

Construction of Sheds.—It is economy to work under cover. Where a machine is run by horse-power, a shed may be constructed as follows: Make it with ten sides, 40 feet in diameter, setting posts in the ground, 12 feet apart, sawed off, 6 feet high: spike on joists 2×8 edgewise against the outsides of the posts at top, and a main rafter running from each post to the center of shed at the proper pitch. This rafter should be 22 feet long, 3×3 at top end, 3×6 at the lower end. Short rafters can be cut in between these to suit the kind of roofing used. Either shingles or boards may be used. Strips of 2-inch band iron, 1 foot long, should be spiked on the outside of the girt-plates, over the joints to prevent spreading. The drying shed

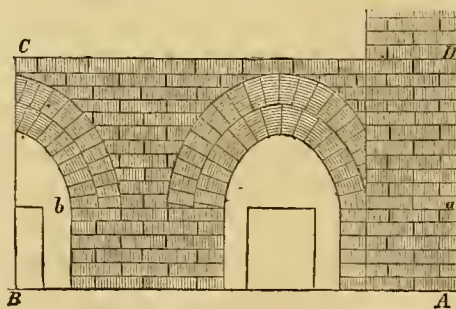


Fig. 3.—ARCHES AND FLUES.

may be 14 feet wide, 180 long, posts 6 feet high set in the ground, 4×4 scantling for plates, 2×4 for rafters. Fig. 1 shows the ground plan of the shed, giving the location of the tile machine, clay pit, horse track, etc., and from this

the drying shed with two rail tracks in it going to the kiln. There is a switch at each end of the drying shed, but only one is shown for lack of space. Many cars are used, on which the green tiles are laid, and remain until dry enough to go into the kiln, each car holding 1000 2-inch tiles.

Construction of Kiln.—The size of kiln, a partial plan of which is here shown (fig. 2), is 14×16 inside; the walls are 16 inches thick in addition, and the firing flues project, forming a platform at each end. Four flues 20 inches wide, run the long way of the kiln; benches or spaces between the flues are 26 inches, and the side benches 4 inches wide. The flues for firing should be 4 feet long, 12 or 13 inches wide, extending out from the kiln. The structure as shown in fig. 2, should be built one foot high, and then it is ready for turning the arches. The arches, shown in fig. 3, are turned over the flues, as indicated by the dotted lines in fig. 2.

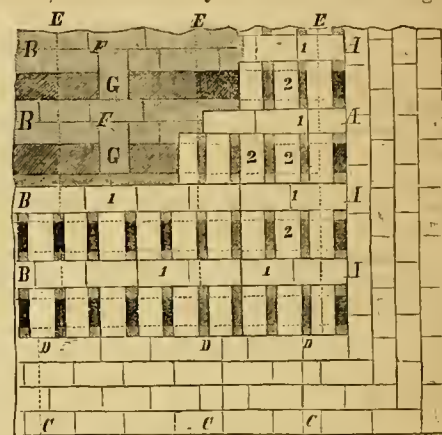


Fig. 4.—FLOOR OF KILN.

The shape of the arch should be higher than wide, or more than half a circle, if not they are apt to flatten and fall in. If too high, they will fall in at the sides. Each course of arches is built independent of the other, except being tied together on the center of each bench, which makes a partition between the flues from the bench up to the kiln-floor. This is shown at G, G, fig. 4. The arches are as wide as the length of one brick (8 inches), and the space between, the width of a brick (4 inches). Fig. 4 shows a portion of the floor finished, which is done by laying bricks (2) flatwise across the spaces between the arches, and a course (1) lengthwise, on the center of the arches. The bricks should be closer over the fire than over the benches, and more space should be allowed at the corners and around the sides than elsewhere, this is important for the purpose of drawing the heat to the corners and sides. It is better to use fire-brick for the floor, and to turn the arches, as they are more permanent, and keep the floor smooth and even. The openings in the floor should vary from $1\frac{1}{2}$ to 1 $\frac{1}{2}$ or 2 inches between the bricks, and 3 inches along the sides of the kiln. The height of the kiln should be governed by the length the tiles are cut, and the number of courses to be set. Eight courses of tiles, cut 13 $\frac{1}{2}$ inches long, would make it necessary to have the kiln ten feet high above the floor. In fig. 4, dotted lines running from A to B, indicate the course of the arches under the floor. The tops of the arches being seen at F. The course of the flues under the arches is shown by the dotted lines at right angles to the arches, running from D to E, while the dotted lines C to D show where the firing flues go through the wall; 1, 1, 1, are bricks lying upon the arches, and 2, 2, 2, bricks crossing from arch to arch, and forming the spaces up through which the fire comes."

Ice Houses—North and South.

With the wane of the summer, as usual, come inquiries about Ice Houses.—There is nothing like necessity to drive us up to action, and the extreme heat of the past summer causes ice to be regarded, more than ever perhaps, as a necessity as well as a luxury. The topic is not a new one for us to discuss with the readers of the *Agriculturist*. In October, 1864, there is a plan and elevation of an ice house, given with considerable minuteness of detail, but at the risk of a little repetition, we must answer some of the numerous questions lately received.

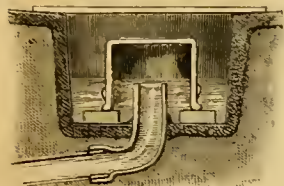


Fig. 1.—AIR TRAP.

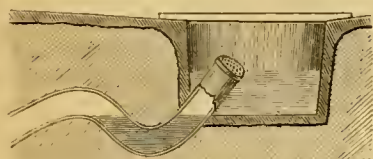


Fig. 2.—AIR TRAP.

Ice Houses may be made in any part of the country, and in fact, one which will keep ice well in Maine, will do so in Louisiana. The difference in the extreme summer temperature of the two States is really very little; and though ice will not keep so long at the South as at the North, yet the same principles apply to its successful keeping in both places. The essentials are two; 1st, a sufficient bulk of ice closely packed; 2d, non-conducting walls, bed and cover. These are very simply attained: as for instance, when a large mass of several tons of ice is piled upon a bed of rails covered over with two feet of straw, and then covered and packed about with straw enough to effectually shield it from the rains. In fact, it would be hard to invent a more perfect way of keeping ice than this,—but it would be inconvenient. A room in the middle of a hay bay would be excellent, and might be very convenient.

Taking the 2d essential first, we must consider that the bottom of the ice house, in order to be a non-conductor of heat, must be so far as possible dry, for water is a rapid conductor, and moist air will thaw ice much faster than dry air, even though the latter be the warmer. The ice will thaw somewhat, at any rate, which necessitates good drainage, and this must be so made that air can neither blow in nor draw out

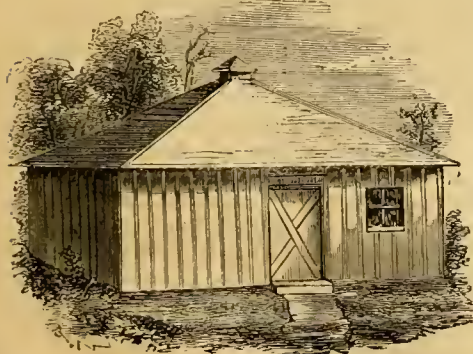


Fig. 3.—ICE HOUSE.

through the drain. To effect this an "air-trap" is introduced at the entrance, and this must be protected from straws, sawdust, and dirt which might stop it up. We give figures of two traps

which will last a very long time without the necessity of being cleaned out. The bottom of

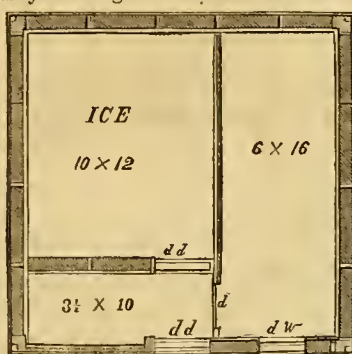


Fig. 4.—ICE HOUSE PLAN.

d, Door; d, d, Double Door; d w, Double Window.

the ice house is grouted, (covered with broken stone pounded flat, and cemented,) sloping to one point, usually the centre, where a round or square well, about a foot deep, is made, and also cemented thoroughly. Up into this well or depression comes the mouth of the drain. In fig. 1, it is a 2-inch glazed drain-tile coming through about 6 inches. This is covered by an earthen pot, also glazed, and set up from the bottom on four bits of stone or brick. Straws and dirt will be caught outside of the pot or upon the bottom, and the water only will flow out, while no air can flow either way. The same end is gained by the contrivance shown in fig. 2, but not so

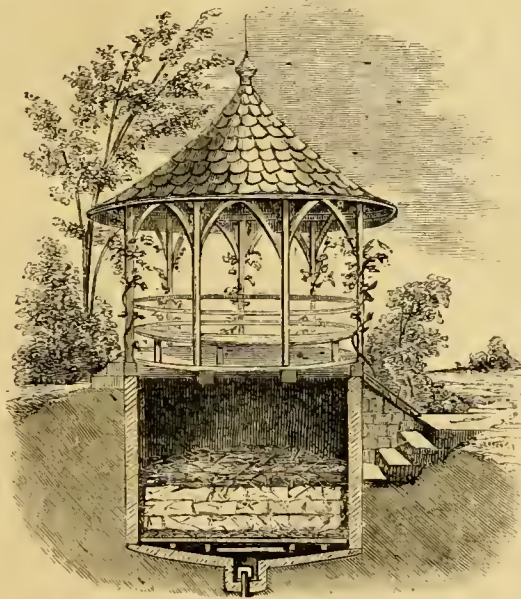


Fig. 5.

well. Here a pipe, bent somewhat S-shaped, shuts out the air, while a cap of copper-wire cloth prevents the straws getting in. The pipe or drain tile may enter a stone or tile underdrain. Sometimes people simply make a well or depression in the bottom of the cemented floor and connect it directly with the drain, covering the drain and partly filling the well with gravel, topped with clean sand. This does very well for a time, but is apt to be stopped up finally, and may make mischief.

The ice house itself of course must stand where perfect drainage is attainable. It may be above ground or underground, or half-under—it makes little difference. We prefer those above ground, except for looks. The under or half-under-ground ones may be more easily concealed or ornamented. The article referred to (page 290, 1864,) gives a good plan for an above ground house, which we will not repeat. The elevation, fig. 3, and plan, fig. 4, show how a

fruit house or cool room for any purpose, may form a part of an ice house, and maintain a low temperature without seriously decreasing the ice. The ice house has foot-thick walls on three sides; the cool room is also thick walled. There is also an entry, which being shut off from the front room and communicating directly with the ice house, may be very convenient if there is plenty of ice, to hang a mutton carcase or a side of beef in for a few days in summer, the door into the ice chamber being opened.

Figure 5 represents an ice house made underground and covered with a summer house, being entered by steps from above with double

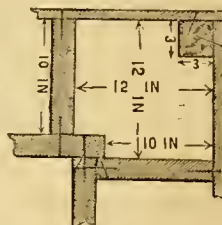


Fig. 6. ICE HOUSE CORNER.

doors to open outward. The walls of the ice house, be they above or below ground, should be of light porous material, like shavings, spent tan-bark, sawdust, etc., and should be so made as not to become wet either by water from without, or from the ice. For an above ground house upon a cemented stone or brick foundation, a few inches high lay sills, 10 inches wide and 2 inches thick, in cement; set upon these, and nail to them the studs, two at each corner, and about 4 feet apart elsewhere. Fig. 6 shows how a corner is framed and nailed. The studs are 2-inch plank 8 feet high and 10 inches wide. Upon them, flush with the outside edges, are spiked the plates, 3 x 6-inch pieces. Corner posts of 3 x 3-inch stuff are heavy enough. The inside is of 2-inch hemlock; the outside of matched inch stuff, horizontal, or if not matched, put on perpendicularly and battened. The filling is best put in and rammed down moderately as the sides go up. Use 6 x 2-inch rafters, and board them on both sides, putting on the top boarding, last and stuffing in shavings to prevent a circulation of air between. In the upper part of the roof there should be a small ventilator, which may be closed more or less according to judgment. The air above the ice becomes somewhat moist, and if there is no ventilation it will become charged with moisture, and conduct the heat from the roof and thaw the ice. The door must give access to the top of the house, and should be double and close. In under-ground ice houses, the outer walls are brick or stone, cemented, or cement upon the earth sides, and furred out, filled, etc., as above

stated. The ice house floor should be of 2-inch plank laid level upon loose rails or scantlings. A thick level layer of straw is laid upon the floor. Then the house is ready for the ice, which should be laid in in solid blocks of uniform size, breaking joints like bricks in a good wall. Between the ice mass and the sides all around pack sawdust, or better the chaff from a fan mill, and in absence of these straw. Finally cover the ice with straw or chaff 2 feet thick.

Saving Seed Corn.—Fall Plowing.

Mr. J. Weldon, of Whinebago Co., Ill., communicates through the *American Agriculturist* the following advice for his western brethren, which it will not hurt our eastern readers to consider: "In several of even Northern counties, the seed corn last spring proved unusually defective; and it is my experience that little re-

liance can be put at any time in seed selected from the cribs, in this country. Allow me therefore to give your western subscribers a sure method of saving seed corn, so that every grain will grow.—As early as all the kernels are partially glazed, make choice of those ears which have the most rows—not less than 16—(usually the more rows, the less is the proportion of cob), entirely filled out at the small ends not shriveled up at all at the tips. If two such ears are on the same stalk, all the better. Leave on enough husks to tie four ears together, to hang them over poles, in some dry place—the upper part of a room, where a fire is kept. I have found a large smoke-house well adapted to such a purpose. The corn should be completely dried, cob and all, before any frost can reach it. Thus secured, cured and kept dry, it will readily germinate after many years. It is very desirable to have as much of the ground plowed in the fall for the next year's corn crop, as can be done well. This is the surest method to destroy the weeds, and to get the ground in the best condition to plant at the right time. It is very desirable to have the ground plowed while it is yet warm enough to cause foul seed to sprout and grow; so that the weeds may be cut down by frosts before they yield ripe seed, hence early fall plowing is best for corn at the West. Land having a clayey subsoil, really ought not to be plowed less than ten inches deep, for should the ensuing July and August not have abundant showers the plants might suffer; but with such showers, a few inches less may do very well. I believe that one efficient hand, with a first-rate team, and furnished with the right implements, can very successfully cultivate 70 or even 80 of corn, if plowed early in autumn, and that he may have all the necessary cultivation finished by the middle of July—and so well that the crop will be out of the reach of a killing frost by the middle of September, and yield *full twice* the average of the six Northern counties of this State. If the land has been managed so slovenly that a very great quantity of foul seed is mixed with the soil, it may take two or even three years to eradicate the weeds, so that one hand with one team could perform all the labor. He might need assistance in thinning out the plants in June."

Observations on Burying Bees.

BY BIDWELL BROS., ST. PAUL, MINNESOTA.

In a prosperous colony during a yield of honey, the Queen or mother bee continues laying to supply the place of bees lost from accident, or continued labor causing death. When the yield of honey fails, which often happens in summer, and always in autumn, the Queen ceases laying, and a gradual and certain reduction of numbers and stores takes place. In this way we are confident that more than one half the relative value of all stocks is lost in the ordinary methods of wintering bees. After a yield of honey, if the weather continues warm, many bees are lost during each successive day, in fruitless attempts to collect honey, requiring also an expenditure of stores for the exertion. From this cause alone, bees at the South are reduced to a mere handful during their mild winters. This can be obviated in a measure by darkening, not closing, the entrance to the hive. Another waste occurs by disturbing the bees in any way, allowing the wind to jar or to cause a draft of air through the hive, making them uneasy; this most frequently happens in windy situations—at times, in all places. The opposite extreme, a

want of ventilation, is equally bad, giving the bees much labor to replace with pure air the impure air accumulating in the hive. In moderate weather each rise and fall of the thermometer outside, is followed by a similar change of temperature within the hive, the bees expanding their bulk in warm terms of weather, and contracting in cold ones, keeping in a circle to best maintain their heat. Having to do this between several combs, some are left between outside ones, which become chilled and perish. In our climate, where the bees are compelled to remain in their hives several months during the winter, as they have no opportunity to carry out their dead, these accumulate on the bottom.

Placing thermometers in several hives, and outside, we ascertained that when the thermometer outside fell below freezing, and during all the time it remained so, the bees maintained a temperature within, of one degree above freezing, though the weather in the open air indicated a temperature as low as 37 degrees below zero, or 68 degrees below that of the bees. Giving three of the stocks a hard rapping, the temperature arose within to 84, 88, and 89 degrees above zero, or an average of 124 degrees above that outside.

In the union of the oxygen of the air with the carbon and hydrogen of the honey eaten, heat, carbonic acid and water are produced, a chemical phenomenon similar to common combustion. Unless the ventilation is very good, the watery vapor is condensed in cold weather to water and ice in the upper part of the hive. The carbonic acid, which is fatal to the bees, if not removed by ventilation, causes death. Hence the need of ventilating the cellars in which bees are kept. In warm terms of weather the ice or frost melts, and running down wets the bees. Should the weather change back to cold immediately, it would cause them to freeze, or closing the entrance with ice they would smother.

In some of these ways the numbers of the bees are diminished, and they seek to replace the loss by raising brood, which is also attended by many losses. For maturing the young bees, honey, which supports respiration, is consumed, and also pollen, which is necessary to support the growth of the body, and this is attended by a high degree of heat. The honey which is fed to the young bees with the bee bread, must contain a large proportion of water (more than is contained in sealed honey), and if the bees can not obtain water to dilute the honey with, the brood will perish. In unfavorable weather it should be given to them in a sponge or similar absorbent, placed within their reach. The proper consistency of honey fed to brood is about that of honey just gathered, which is half water. By observing when bees collect water, one can be sure they are raising brood and consuming honey. If bees remain quiet and are strong in numbers, only honey is needed to carry on respiration. This causes comparatively little waste, but should exertion become necessary, and new bees be required to replenish the hive, pollen is needed, which consists of nutriment and residuum. The latter, if not expelled, accumulates in the bodies of the bees, causing uneasiness and disease.

In burying properly under ground, the principle losses attending bees kept in other ways, are saved by an even temperature, (which we have found to remain at about 50 degrees), ample ventilation, complete dryness, and total darkness; these constitute all the essentials to success. After burying, the bees gradually become quiet, usually requiring two days, then an

even stillness prevails, which is not interrupted throughout the time they remain, unless heavy jarring occurs on the ground immediately adjoining. The time bees should be buried is when they cease collecting honey, even though it happens in warm weather; then the numbers, which are always large, can be preserved until a yield occurs again. In burying 7 lots of bees last winter, numbering from 1 to 40 colonies—in all 224 stocks—we found burying bees in trenches to require only half the material and labor that placing them in pits did, as described in the September number, last year. We ascertained it required but one pound per month to winter a strong colony, numbering from 40 to 50 thousand bees. Where the winters are not too severe, as the next best plan to burying, we would advise letting them remain on the summer stands, removing the honey board and placing in its stead a straw mat, like that described in the February number of the *Agriculturist* for 1863, page 49; place over it the honey board, and stand boards, evergreen boughs, or brush with the leaves on around the hives to keep off the warm sun and cold wind, removing occasionally in pleasant weather. This is far better than the usual practice of destroying the bees in autumn, or allowing them to waste away in winter, and might we think add millions of dollars annually as profit to bee-keeping.

What sort of Animal is the most Profitable for the Producer and Consumer?

This is, undoubtedly, that animal which has the least offal and fat, and yields the largest amount of the best pieces of meat for the table, in proportion to the weight of its carcass. Suppose the value of the dressed animal 17½ cents per pound—the present average price of good beef—the tender-loin alone might then be worth 70 cents per pound; the Porter House steak 40 cents; the fore-rib roasting-piece, 35 cents; sirloin steak, 30 cents; and the Rump (for corned beef), 25 cents. Of the other parts we need not speak, the above-mentioned being sufficient to illustrate our point.

The West Highland cattle, of Scotland, were formerly superior to all other breeds in the crops, from which part of the carcass the Porter House steak and the Tender Loin are cut; and, possessing in addition to this, a general evenness of form, made up of lean, tender, juicy meat, they command from a penny to twopence (two to four cents) more per pound in the London market, than most other breeds. The Devon comes nearest to them in a good carcass, next the Hereford and Short-horn, then other breeds.

Latterly, considerable attention has been paid by breeders of these last three famous species of cattle, to make them equal the West Highlanders in the crops and fore ribs, and great improvement has consequently been made in these desirable points; but with all their care, it will be a long time before Herefords and Short-horns generally equal them here. Devons being originally better in the crops; the best bred are now nearly equal to the Highlanders in this point.

It is because the South Down sheep so eminently excels all others in the same points, in which the Highland cattle are superior, that its carcass commands a higher price than any other. We do not take the little Welsh mountain sheep into consideration, because it is a *fancy* animal, whose superior mutton is made from the peculiar rich fine-scented grass it feeds on, affecting the taste of the meat in something the same way, as does their autumnal food the

flesh of our celebrated Canvass Back Ducks.

It is a mistaken notion on the part of some to suppose that when we have lessened the offal of our domestic animals, and added a large proportion of fat, that we have done *all* that is necessary to perfect the carcass for the table. Great attention, as we have shown above, must be paid to increasing the proportion of the choicest parts of the animal. Suppose the whole carcass was equal to tenderloin; then it would be worth four times its present value in the market; or if equal to the fore rib, then double the present value. Fat is a dear product, and the less we have of it in the carcass, and the more we get of lean, tender, juicy meat, the better and more profitable it will be for producer and consumer. Fat is unhealthy food, particularly in warm weather, even in form of pork. The reason why the English and American people, who know their value, so much prefer the Berkshire breed of swine to all others for family pork, is, that they give a much greater proportion of lean meat to the carcass, especially in the hams and shoulders.

Rustic Gates for Hedges.

The formal gates of iron or of planed carpenter's work, that we often see in hedges, seem

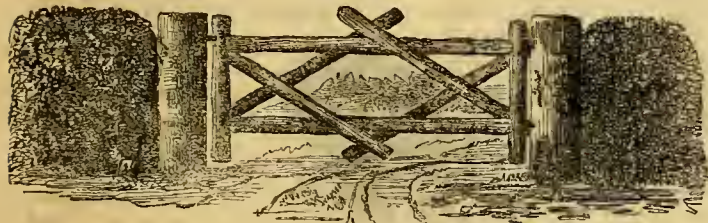


Fig. 1.

out of keeping with the rural expression of the wall of living green upon each side of them. Gates of rustic-work, of pleasing designs, and well made, are appropriate in such places. Mr. J. V. Finbois, of Worcester, Mass., has given us designs for small and large gates, which are so simple that almost any one can construct them.

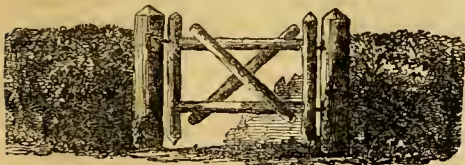


Fig. 2.

These, like most other rustic-work, should be made of red cedar poles, prepared by trimming off the twigs and branches, and leaving the bark as entire as possible. The ends are to be cut smooth and slightly rounded or pointed, to shed rain. "Figure 1, is a gate large enough to allow of the passage of carts; it is made of poles of from three to five inches in diameter. The two long pieces should be mortised into the uprights,

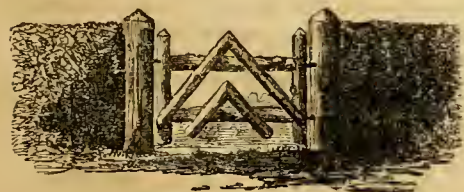


Fig. 3.

and the cross pieces may be bolted on, the heads and nuts of the bolts being counter-sunk. Figures 2 and 3, are small gates, made in the same

way. When neatly constructed, they are both pretty and durable. Figure 4, is a double gate with a roof. This is a rather novel form of gate, but is quite easily and cheaply built. The ends

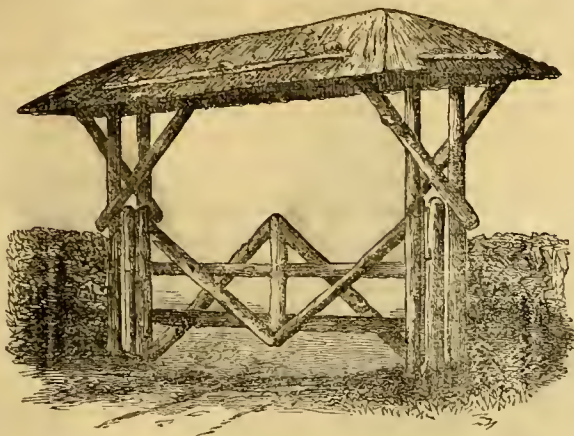


Fig. 4.

are two posts placed about two feet apart; upon these a light roof with very wide projecting eaves is built, and supported by the cross braces which are bolted into the uprights. Between the uprights on each side is placed a shorter post, upon which the gates swing. The roof may be covered either with thatch or with cedar poles placed close together. If thatched with straw, wheat or rye will answer the best. A light pole must be placed a little above the eaves on each side, and held in place by three or four stones to keep the thatch smooth. In a hedge where there are a few tall trees, this roof has a very pleasing effect, and would add much to the appearance of a country place, besides preserving the gate from injury by the action of the weather."

The Seventeen-Year Locust.

(*Cicada septendecim*).

In the middle of June, as we drove into the grounds of a friend in Western Pennsylvania; we were quite surprised to hear, as we supposed, the sound of a threshing machine, and asked what they were threshing. "It is the locusts in the orchard," was the reply; "it is our locust year." We went to the orchard and found the trees filled with the insects, whose combined notes made a most remarkable din. It being the first time we ever happened to see



Fig. 1.

locusts in plenty, we watched their operations with much interest, and brought away specimens for illustration. Though called a "locust," the insect does not belong to the true locusts, but is a *Cicada*, or Harvest-fly, one species of which is common every year, though it does not appear in great numbers. The insect lays its eggs in little excavations made in the twigs of forest and fruit trees. The cavity is made obliquely, by means of a piercer, and from 15 to 20 eggs are deposited in it; then another cavity is made, and so on, until the insect has deposited between four and five hundred eggs. The appearance of the nests is shown in fig. 1. The twigs

thus perforated break off and fall to the ground, where in a few weeks the insect is hatched, or they may be hatched upon the tree and fall to the ground. The young insect is provided with

very strong fore-legs, with which it burrows its way into the earth, where it lives for the remarkably long period of seventeen years in the grub state, living upon roots, not very far below the surface. The grubs slowly increase in size, and as the termination of their lengthy probation approaches, they gradually work towards day-light, making long and smooth cylindrical burrows that finally terminate at the surface. They issue at night in such numbers that the ground is completely honey-combed by their perforations. When they leave the earth they are still grubs, or rather pupae, and they immediately proceed to cast off the soiled suit they have so long worn in their subterranean life; it is no little effort for them to get rid of their old clothes. They

climb upon bushes and the trunks of trees, or any other convenient place for making their toilet, and fasten themselves by means of their claws. After

some struggling the jacket opens at the back, and the insect pulls itself out of its garment, which is left standing entire, save the



Fig. 2.

rent through which its wearer escaped, (fig. 2). After the insect has stretched and dried itself, it goes to join its companions. Fig. 3 gives the perfect locust of the natural size. It resembles our common Harvest-fly in shape, but is more slender, its wings and body are marked with orange, and it has prominent red eyes. Near the tips of the wings there is a dusky line shaped much like the letter W, which has been considered by the superstitious to indicate war. The insects probably do much damage in the grub state to the roots of plants, and in their perfect condition the injury they cause to forest and fruit trees in perforating their twigs in the



Fig. 3.

manner already described, is considerable. They appear at only long intervals, and then in such astonishing numbers that any effort to destroy them would seem of no avail.

LIME VS. PHOSPHATE.—"T. W." of Lancaster Co., Pa., asks: "Which is the cheapest fertilizer, Lime at 24 cts. per bushel, or Raw bone phosphate, at \$60 per ton?" With the same propriety we might ask him, "Which is the most economical beef at 20 cts. per pound, or cotton sheetings, at 30 cts. per yard?" The two fertilizers named are entirely different in their action and uses in the soil. If they would both produce a similar increase in the crops, then the lime applied this fall and the superphosphate or bone-dust, applied upon spring crops, would probably give much better results. There are soils much benefited by lime, on which, after a while, it ceases to produce the same good effects. On such soils phosphoric acid is probably needed.

Wilson's Early Blackberry.

Whoever was instrumental in introducing the New Rochelle Blackberry, did a good thing, as it served to turn attention to a hitherto neglected fruit. Since then, other seedlings of merit have shown that the capabilities of the blackberry were not all exhausted in the New Rochelle. In October, 1864, we figured and described the Kittatinny, which is in every respect superior to the New Rochelle, and we now give a figure of Wilson's Early Blackberry, a variety possessing qualities that entitle it to especial notice. This variety was discovered in Burlington Co., N. J., by Isaac Wilson, who removed it to his garden about the year 1854, and there cultivated it for some years. It ultimately fell into the hands of some of the enterprising fruit growers of that section, who having tested and made known its merits, find that they have difficulty in propagating it fast enough to supply the demand for plants. While the Wilson is a sweet, productive and excellent berry, and ripe when it is black, its great value consists in its earliness, and the evenness with which it ripens. These are important qualities to the market grower, to whom a few days in the time of ripening is a matter of great pecuniary interest. The Wilson's Early yields the bulk of its crop before the Kittatinny and New Rochelle are ready for market. The picking of this variety is all over within three weeks, while the other sorts last much longer. While the Wilson can not supersede the other varieties we have named, it forms a most excellent companion to them, and by its greater earliness, prolongs the season of blackberries in a manner very important to the fruit grower.

The engraving is from a specimen from Mr. John S. Collins, Moorestown, Burlington Co., N. J., and shows the size, productiveness, and peculiarities of the leaf. We have seen the plantation of this variety of Mr. Wm. Parry, of the same Co., and were much pleased with the

vigor and productiveness of quite young plants. It is quite hardy near New York City, and we hope it will prove so farther north, as it is a valuable addition to our list of blackberries.

The engraving shows a peculiarity of the leaves that is quite characteristic of this variety. The leaves of the blackberry are usually three-



WILSON'S EARLY BLACKBERRY.

parted, but in this the divisions are often confluent, or run together, and sometimes one of the lateral divisions is entirely wanting, and the other joined to the central one, so that the outline of the leaf is like that of a mitten, the lateral division forming the thumb. When the plant is kept low, as it should be, by stopping the growth of the canes at four or five feet, this variety throws out a great number of fruit spurs, which are generally erect. It is a great mistake to allow any blackberry to make canes from six to ten feet high. Blackberries are easily multiplied by cuttings of the root, and one good plant will, with proper treatment, make a large number. This is done in the spring, and we shall give seasonable directions for doing it.

House Plants.

In spite of the many practical difficulties in the way of complete success, those who really love in-door gardening will contrive to have some growing things around them. Beginners in this work desire nothing so much as good advice; and we now propose to offer a little. First, then, in regard to air.

So long as we warmed our houses by fire-places or open wood-stoves, and did not make our rooms air-tight, it was comparatively easy to raise house plants; but with air-tight coal-stoves and furnaces, and with hot, unventilated rooms, it is very difficult. Some measures must be taken to counteract this excessive dryness of the air. One method is to keep a pan of water in the hot-air chamber of the furnace; another to keep such a vessel on the stove in the apartment devoted to plants. And these pans of water should be so placed that they will evaporate several quarts per day. In addition to this, some persons adopt the following plan: Let the table for plants be as wide as the window-sill. Around the edge of this table fasten cleats about three inches wide, making a sort of sink or basin. Cover the whole of the wood-work with two coats of paint. Put into this basin two inches sand,

and cover the sand with one inch of fresh green moss. Set the pots on the top of this moss, slightly bedded in it. Any one can see that this will serve to diffuse moisture through the atmosphere, for the moss and sand will be saturated as often as the plants are watered. This is only one method for securing a healthy state of the air; let others be tried, which are practicable, for this is a very important matter. Of course, the room should be ventilated as often as possible, without injury to the plants from frost.

Secondly, as to soil. Different plants require different kinds of soil, for their highest health and vigor, but for the majority, the following answers an excellent purpose: A compost made of sand, leaf-mold, old manure, and earth from

an old pasture, in equal parts, well mixed.

Then, a few words as to watering, temperature, etc. It is a good rule to give water only when the ground is dry, and then to give it thoroughly, so that it will run through the ball of earth. No universal rule can be given, however. The African Lily, for example, needs water to saturation, while the Cactus family need but little. Watch the foliage, and never allow it to flag. Examine the soil, and never allow it to become dry. Experience will teach one when to water, by noting the sound of the pot when rapped with the knuckles, or by its weight when lifting it. Of course, the leaves should be sprinkled as well as the soil.

There is ordinarily more danger to our plants from heat than cold. As a general rule, 60° to 70° by day, and 45° to 50° by night, is high enough. The exceptions to this must be learned by experience.

About Lilies, Native and Foreign.

Plants that are readily obtainable by every one, are perfectly hardy, and are not particular about soil, commend themselves to popular favor. Most of the lilies possess these qualities, and we find them everywhere among the common plants. They are among the few flowers mentioned in the Bible, and one of them is the chosen emblem of purity. Every old garden has its clump of White, Tiger, and Martagon lilies—one or all of them; and though old and neglected varieties, they are not on that account to be despised. Indeed, for purity of whiteness and delicacy of fragrance, the old White lily may hold up its head among the more showy and costly new comers. We have three native species common at the North, which, though seldom seen in our gardens, are highly prized in those of Europe. All of these, when introduced into the favorable soil of the garden, bloom much more finely than they do in their wild state, and they are moreover so common and readily obtained that even the poorest can have them. The Wild Orange-red Lily, *Lilium Philadelphicum*, is found in dry fields, etc. It produces only a few upright flowers, which are orange, with blackish spots. The Wild Yellow Lily, *L. Canadense*, grows in moister places than the foregoing. It has more flowers, which are nodding, and of various shades of yellow and orange, with brown spots. But the finest of our native lilies is the Turk's-Cap, or Superb, *L. superbum*. This will in cultivation often at-

tain a height of 6 or 8 feet, and produce a gorgeous pyramid of thirty or forty flowers, which have reflexed orange or scarlet petals, with dark purple spots. Any of our native sorts may be marked when in flower, and taken up when the foliage commences to wither. They bloom in July and August, and are all valuable, either by themselves, or in making up a collection. We have often mentioned the varieties of *Lilium speciosum*—or Japan Lily. This species, usually called by florists *L. lancifolium*, presents several varieties, all beautiful. The new and splendid Golden-handed Lily, *L. auratum*, was figured in

A. S. Fuller. This year a set of Japanese varieties, with such names as Iden Soto, Iska Wojarna and other Japanese names applied to them, have been introduced. We have flowered the most of these novelties, and can find no other quality than their earliness to recommend them. They are well enough in their way, but lack positive character. Lilies may be planted in autumn or in spring. They will do something in poor soil, but much better in one that has a plenty of old manure forked in to a good depth. We have said these lilies are hardy, and so they are about New York City, but even here, like other herbaceous plants, they flower all the better if they are covered with littery manure during the winter. Lily bulbs should never be long out of the ground, as they can not, like Tulips and Hyacinths, lose their proper roots without injury, although they will remain for some weeks in good condition, if packed in moss.

Bulbs—Plant Now for Spring Flowers.

Every one enjoys the spring flowers that come from the hardy bulbs, and yet we seldom see these in gardens, for the reason that they are forgotten in autumn—the proper season for planting them. As a reminder we will say, that the sooner, after the middle of October, the bulbs can be got into the ground, the better. If the bulbs are to be bought, purchase early, before the stock of the dealers becomes reduced. If the soil is not in good condition, it should be manured with old cow manure, and if disposed to be heavy, some sand may be worked in. The best success will be had if the old soil be dug out to the depth of twenty inches, and the space filled with fresh pasture loam and decayed cow manure.



THE LONG-FLOWERED LILY—*Lilium longiflorum*.

September, 1865, and though yet among our expensive bulbs, is one that we hope to see become as popular as the others. A rather old and neglected Japanese species is the Long-flowered Lily, *L. longiflorum*. This is seldom seen in gardens, probably for the reason that it was first introduced as a green-house plant. It is perfectly hardy, and throws up a strong stem, one or two feet high, which bears at its summit from one to three large and long flowers, of a pure whiteness and a delicious fragrance. In order to make this fine species better known, we give an engraving (of about half size,) from a specimen sent us by Mr. Isaac Buchanan, of Astoria. We have also had specimens of this beautiful lily from Messrs. Peter Henderson and

When the bed is prepared, let it settle, and then plant the bulbs. It is a good practice to put a little sand under each bulb. Hyacinths should be eight inches apart each way, and four inches deep. Tulips six or seven inches apart, and about three and a half deep. Crocuses may be nearer; three inches distant and two deep. Snow-drops, about the same as crocuses. Lilies are to be at least a foot apart each way, and five inches deep, and the same distance for the Crown Imperial. In making up the beds, it is well to leave them a few inches above the general level, as they will settle during the winter. Though the bulbs mentioned here are all perfectly hardy, yet they will come out all the stronger in spring, if covered when cold weather

sets in, by a layer of littersy manure, or leaves, which last may be kept down by sprinkling a little soil over them. Bulbs may be potted now and kept in a cool place until frosts come, when they may be placed in the cellar, from which they are to be taken during the winter at intervals, a few at a time, to a warm room to flower.

Insects and Plant Fertilization.

FIFTH ARTICLE.

Are all flowers then, it may be asked, aided by insects in the essential business of forming seeds? By no means. In many cases, where cross-fertilization equally takes place, the transport of pollen is left to the winds. Such flowers produce no honey, nor anything attractive to insects, and such flowers, we may add, have no showy corolla. So we may conclude that corollas, or bright colors in any part of the blossom, and also fragrance, are given to plants in order that they may attract insects, and be aided by them; an aid which many are absolutely dependent on. Not that all plants destitute of corollas get no help from insects. Willows, for



Fig. 1.*

instance, which bear stamens and pistils on different trees, as every one knows, are thronged by bees when in blossom, and the pollen is carried from the male to the female catkins. Pines, Spruces, and the like, on the contrary, are left to the winds to fertilize. And here it is worth while to notice what a great preponderance of male flowers these produce, and what a vast amount of pollen—many millions of grains for every female flower or seed—for, with only the winds to carry it, this seemingly wasteful superabundance of pollen is really a needful provision to secure fertility; while in Willows, where bees are invited to carry it from flower to flower, the proportion of pollen to the seeds is by no means excessive. Grasses and grains also depend upon the wind, and have accordingly a vast excess of pollen. Their flowers are most commonly hermaphrodite; but when the pollen is about to be shed, the anthers on their long and delicate filaments, and the feathery branching stigmas, are both hung out to the breeze together, so that there is sure to be a copious crossing.

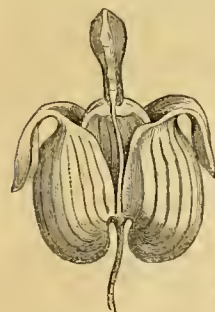


Fig. 2.

We now understand what the good of crossing is, and it may be asked, is crossing provided for in all flowers? Are there any hermaphrodite flowers in which self-fertilization is regular or certain? Yes: there is one class of such cases. Most of the earlier flowers in our Wild Balsam, Jewel-Weed, or Touch-me-not, fertilize in the early flower-bud; and so do most of the later flowers of Wood-sorrel, and of our common Violets. These flower-buds never open, have no showy corolla to attract insects, and no pollen but their own can reach the stigmas. These and the few stamens are shut up close together. Nature here being as careful to secure close-fertilization as she ordinarily is to prevent it.—Two things about this are worth

noticing. First, since fertilization is made sure by shutting up the anthers in close contact with the stigma, there need be no superfluity of pollen; and it is a remarkable fact that these anthers really contain only a dozen or two of grains of pollen, but these are large and unusually efficient, and almost every one of them does its work. Nature so prodigal where she has only winds and chance to rely on, but less so when insects are carriers, is parsimonious enough when her arrangements are such that no pollen is likely to be lost. Secondly, all plants which produce flowers of this kind (of which many are known), have ordinary blossoms also, with showy corollas, open to the visits of insects and actually cross-fertilized by their aid; so that the advantage of a cross is secured for each generation in a part of the flowers, while certain fruitfulness by close breeding is economically secured in the rest. We may fairly suppose that the latter could not go on for many generations unless it were alternated with the former. For if it could, what would be the use of the former sorts, which are always less prolific than the latter? No plant is known in which at least an occasional cross-breeding is not provided for.

At first view, however, we should say that we have just such a case in all the Fumitory family. Here there is only one kind of blossom, and that seemingly contrived on purpose for self-fertilization. The Showy *Dicentra*, commonly called *Dielytra*, of late years a great ornament of our gardens in spring, is the most conspicuous example. The red, heart-shaped corolla is seen, unopened, in fig. 1. The tips of the two outer and larger petals soon roll backwards, as in fig. 2. But the inner and smaller pair of petals remain stuck together at the tips, and may be likened to a pair of little spoons in contact, face to face; the cavity so formed completely shuts in the six anthers, closely surrounding the 2-lobed stigma. The anthers open early, and on their inner face, and the pollen is abundantly shed upon the enclosed stigma. Here, we should say, close-fertilization is a sure thing, and crossing is out of the question. But consider, first, that there is nectar in the sac at the bottom of the large petals; also that bees, especially humble-bees, visit these flowers; in reaching the nectar the bee brings his head down to the opening at the upper part of the flower on each side. When thus sucking out the nectar from one side of the flower, his head pushes the cap formed of the inner petals off to the other side, i.e., into the position represented in fig. 3, and brushes against the now exposed anthers and stigma. Some of the pollen which thus smears the head of the bee, carried to the next flower, is most likely to be in part deposited upon its stigma. So that here, after all, we have a beautiful arrangement for cross-fertilization! In both the *Dicentra* and in the smaller one-sided but otherwise similar blossom of *Corydalis*, we have seen the bees at work, carrying the pollen rapidly from flower to flower, and from plant to plant. And the crowning and very curious fact has recently been ascertained by experiment, that if insects be excluded, even these flowers set little or no seed. Yet the stigmas get completely covered with pollen from



Fig. 3.

their own stamens! So it must be that the pollen is powerless, or nearly so, upon the stigma of the same flower, but is efficient upon the stigma of neighboring flowers; and that breeding in-and-in, which seemed unavoidable from the structure of the blossom, is here prevented only by this differentiation of the pollen and stigma. The proof that this is really so, as shown by some other flowers, will be given in another article. A. G.

Preservation of Vegetables in Winter.

BY PETER HENDERSON, SOUTH BERGEN, N. J.

The following timely article is a chapter from Mr. Henderson's forthcoming work on Gardening, alluded to in the "Basket."

"Our manner of preserving vegetable roots in winter is, I think, peculiar to this district, and is very simple and safe.—After taking up such crops as beets, carrots, horse-radish, parsnips, turnips, potatoes, etc., in fall, they are put in temporary oblong heaps, on the surface of the ground on which they have been growing, and covered up with 5 or 6 inches of soil, which will keep off such slight frosts as are likely to occur until time can be spared to put them in permanent winter quarters, this is done in this section usually during the first part of December, in the following manner: A piece of ground is chosen as dry as possible; if not naturally dry, provision must be made to carry off the water, lower than the bottom of the pit. The pit is dug out from three to four feet deep, about six feet wide, and of the length required; the roots are then packed in in sections of about two feet wide across the pit, and only to the height of the ground level. Between the sections, a space of half a foot is left, which is filled up with the soil level to the top; this leaves the pit filled up two feet wide in roots, and half a foot of soil, and so on until the whole is finished. The advantage of this plan is, that it is merely a series of small pits, holding from three to five barrels of roots, which can be taken out for market without exposing the next section, as it is closed off by the six inches of soil between. Also that we find that roots of all kinds keep safer when in small bulk, than when large numbers are thrown into one pit together. In covering, the top is rounded so as to throw off the water, with a layer of from 18 inches to 2 feet of soil. This way of preserving roots, with perhaps the exception of potatoes, is much preferable to keeping them in a cellar or root house, as they not only keep fresher, retaining more of their natural flavor and color, but far fewer of them are lost by decay than when exposed to the air and varying temperature of a cellar. Unmatured heads of cauliflower or broccoli, however, are best matured in a light cellar or cold frame, by being planted in close together; in this way good heads may be had to January. Cabbages are preserved very simply; they are left out as late as they can be pulled up by the roots, in this section about the end of November, they are then pulled up and turned upside down—the roots up, the heads packed close together, in beds six feet wide, with six feet alleys between, care being taken to have the ground levelled where the cabbages are placed, so that they pack nicely. They are left in this way for two or three weeks, or as long as the ground can be dug between the alleys, the soil from which is thrown in on the beds of cabbage, so that when finished they have a covering of four or six inches of soil. This is not enough to cover the root however, which is left partly ex-

* Figs. 1 and 3.—Flowers of *Dicentra spectabilis*; 1, unopened; 2, open; 3, with the united inner petals pushed off to one side.

posed, but this is in no way injurious. Some prefer to cover them up at once by plowing a furrow, shoveling it out wide enough to receive the heads of the cabbages, then turning the soil in on the heads, and so continuing until beds of six or eight feet are thus formed. This plan is rather more expeditious than the former, but it has the disadvantage of compelling them to be covered up at once by soil, while the other plan delays it two or three weeks later, and it is of the utmost importance in preserving vegetables that the operation (particularly the final covering) be delayed as late in the season as frost will permit. Generally more is lost by beginning too soon than delaying too late.—Onions, we find, are best preserved in a barn or stable loft, in layers of from 8 to 10 inches deep, covered up with about a foot of hay or straw on the approach of severe frosts. The great point to be attained is a low temperature and a dry atmosphere; they will bear 20 degrees of frost without injury, provided they are not moved while frozen, but they will not stand a reduction of temperature much lower than this without injury.

Notes on Grapes and Grape Culture.

The date at which we write is too early to allow us to say what is the result this year with the newer varieties of grapes. We hoped to have met at the gathering of the American Pomological Association, at St. Louis, cultivators from every section of the country, and thus arrive at something like an "average verdict" upon the numerous grapes that are still on their probation. The unfortunate postponement of that meeting is a great disappointment to us, and will prove a serious detriment to the cause of horticulture in general, and to grape culture in particular. People are sufficiently waked up to the importance of planting vines, and the universal question is, "what shall I plant?" And we are no nearer a satisfactory answer than we were five years ago. The Hon. Horace Greeley, noticing during a recent trip in New England, the general failure of the large fruits, comes out with a strong appeal to the people to plant vines, and concludes it in the following characteristically practical way:

"I hope our Agricultural Societies and Farmers' Clubs will devise and adopt fit measures to stimulate the planting of the Vine; meantime, I, as a mere beginning, will pay a premium of \$200 to the first, and \$100 to the second township of not less than 100 houses, whose three principal officers shall certify to me that every dwelling in that township has not less than two well planted, thrifty Vines."

Doubtless many townships will take steps to obtain these premiums, and we shall have numerous applications for advice as to what to plant. Here is just the trouble and the point upon which people honestly differ. The only two varieties that we are able, with our present knowledge, to suggest for planting anywhere and everywhere with a fair prospect of fruit, are the Hartford Prolific and Concord. While we are well aware that neither of these can rank as first class grapes, they will, as a general thing, give fruit, and are more commonly free from disease—though not absolutely exempt—than most other sorts. We have many much better grapes than these, that in certain places are about all that can be desired, and we should be glad if we could recommend every one to plant them largely without previously testing them. The experience of one or two years in a few localities should not make or mar the reputation of

any variety. We recently saw the Creveling, a variety with a generally excellent reputation, almost killed with mildew, while along side, the Adirondac, a variety often badly mildewed, was freer from it than any other in a quite large collection. We ask one cultivator about his grapes, and he tells us that his Concord is doing well, but his Iona's are badly mildewed; and another, in reply to the same query, says he has some mildew, but the Iona the least affected of any. In respect to the quality of the fruit of the leading varieties now before the public, we are well enough satisfied, but with regard to their hardness and freedom from rot and mildew, we are in as much uncertainty as ever. Now, will our grape growing readers help us to do what the Pomological Association ought to have done: give some grape statistics? We would like brief reports from all parts of the country, giving the behavior of the different varieties, age of vine, time of ripening, freedom from mildew, rot, sun scald, and hardness of vine. The soil and exposure of the vineyard should also be stated. If a sufficient number of these reports are received, they will be tabulated, and will probably show results both interesting and useful.

Small Fruits—New Raspberries.

It may appear to some that we devote an undue space to the culture of small fruits; but such have little conception of the great importance of this interest. Those who grow their broad fields of grain, no doubt look upon the growing of berries as small business, but a visit to any of the small fruit regions would convince them that "man does not live by bread alone," but uses a great deal of fruit with it, and that often times, these potterers with small fruits, realize more ready money from a few acres than does the proprietor of an extensive farm.

Many an occupant of a place of a few acres near our country towns can pay a good part of his rent by attention to the culture of small fruits. This is one reason why we desire to keep the readers of the *Agriculturist* informed of all the new varieties that appear worthy of trial.

The great trouble with the raspberry has been want of hardness, and cultivators are now endeavoring to produce varieties that shall combine good quality with productiveness and hardness. We gave in August an account of the Philadelphia Raspberry, and now give brief descriptions of two others, which are likely to attract some attention. The descriptions are given from Fuller's Small Fruit Culturist, in advance of the appearance of that work.

THORNLESS BLACK-CAP.—Canes strong, very erect, and more branching than other varieties of this class, reddish purple, smooth and thornless. Leaves medium sized, occasionally with a very small prickle on the petiole. Fruit large, shaped like the common Black-cap, black, sweet, and rich; ripens a week earlier than the Doolittle.—An accidental seedling of the common Black-cap, which originated in the gardens of Mrs. Davison, Erie Co., N. Y., and sent out by Joseph Clinton, Angola, N. Y. It is exceedingly productive, and would be a valuable addition to our list of varieties, even if it had no other merit than that of being thornless.

CLARK.—Canes strong, erect; spines stout, numerous at the base of the canes, but scattered above, white, with the tips slightly colored. Leaves large, coarsely and unevenly serrate, wavy when young, but becoming flat and smooth with age, deep shining green above and silvery white on the under surface. Fruit large,

regularly obtuse conical, separating freely from the receptacle, moderately firm; grains medium in size, of a light crimson color; flavor very sweet and rich.—This variety—a very productive and hardy one, for one of its class—originated with E. E. Clark, of New Haven, Conn.; it promises to be one of the very best for family use, and also an excellent market berry, where the distance is not very great.

Heeling-in Trees.

The nursery man heels-in his trees or "lays them in by the heels" as soon as they are dug, provided there is to be any considerable interval between the taking up and the packing. It is something which may be practiced to advantage by the purchaser of trees whenever they are received from the nursery, and cannot be set immediately they arrive. Indeed, if trees are needed for planting next spring, it is much better to purchase them this autumn, and carefully heel them in for the winter. There are several good reasons for purchasing trees in the fall. The work at the nursery is much less hurried, the stock of varieties has not become reduced, the risks of transportation are much less, and in spring the trees will be on hand just when they are needed. The operation, to be successful, needs only a little care. A trench is to be opened, in a well drained place, wide enough to admit the roots, and deep enough to set the tree lower than it stood before. The trees are placed in an inclined position, to prevent the tops from being too much exposed to the winds, and they are set in close together, the roots being spread and carefully covered as the work progresses, allowing no vacant spaces. The earth is then banked up over the roots to the depth of a foot, trodden hard, and smoothed off to shed rain. Tender varieties of trees may have their tops covered with evergreen boughs.

The Tritomas.

These showy autumnal plants, now coming into blossom, deserve repeated and unstinted commendation. Their long, lance-shaped leaves look attractive during the early summer, and hardly need the addition of flowers. But when August and September come, the early variety (*Tritoma glaucescens*) sends up its blooming stalks, from two to four feet long, and eight or ten from a single root, crowned with spikes of orange-crimson blossoms which are truly gorgeous. In September and October, the later sorts (*T. scrotina*) follow, keeping up a constant and brilliant succession of blooms. A figure was given in November, 1864, of *T. Uvaria*, from which most of the garden varieties have been obtained.

It is truly remarkable, how independent and almost regardless of frost these plants are. Cold weather, which blackens the dahlia and kills down a multitude of other flowers, only seems to give these a new start. In England they keep on blooming up to Christmas. And in our country, medium sized plants may be taken up in August and potted, when, if watered and shaded a few days, they will go on growing, and will flower in the house till into December. This we know from experience.

Some persons winter their plants in the cellar, like cannas and dahlias. But this is unnecessary trouble. Bend down the stalks on the setting in of winter, lay over them a few inches of leaves or other garden refuse, then cover the whole with a roofing of sods, laid up

like a mound, so as to shed rain, more or less. In the spring remove this by degrees, and the plants will come out in first-rate condition.

Hedges and Hedge Plants.—2d. Article.

THE SWEET VIBURNUM.

In the article last month, it was stated that we had made little progress with hedging in this country, until native plants were taken for the purpose. There are doubtless many shrubs that are capable of forming good hedges, which have not yet been tested. The subject of the present article is one we have long thought would make a good hedge plant, but we did not know that it had been tried, until we received the subjoined communication from a valued correspondent, who is a great lover and close observer of trees and shrubs. The Sweet Viburnum, *Viburnum Lentago*, is quite common all over the country, and often forms a small tree, fifteen or twenty feet high, covered in May and June with clusters of white flowers, like those shown in the engraving. The flowers are succeeded by a small, one-seeded, berry-like fruit, blue-black in color, and ripe in autumn. The shrub belongs to the same genus as the common Snow-ball, but has all its flowers perfect, while in the Snow-ball, all or part are sterile, and very much larger. As an ornamental shrub it is worthy of more attention than has yet been bestowed upon it.

"Whoever travels in Westchester County in the last half of May, notices the Dog-woods in full bloom, and not less their companions in whiteness and beauty, the 'Nanny-berries.' It is known as the Sweet Viburnum, and in other localities as the Sheep-berry, probably from the fact that it flourishes in sheep pastures in spite of all the shortening-in it gets from those close nibblers. The goat is supposed to give it its name 'Nanny-berry,' and it is one of the best certificates of its extreme hardiness and vitality, that in highways and pastures it survives all the croppings of the goat, which makes a clean sweep of briars and most other shrubs. It was its low bushy head, formed under such treatment perhaps, that first suggested its use as a hedge plant. It is certainly one of the best of all deciduous shrubs for that purpose, and nothing but its commonness and cheapness can prevent it from having a rapid run and wide spread popularity for hedges.

A good deciduous hedge plant is still a desideratum. The Hawthorn, which is the glory of English hedges, and so prominent a feature in their landscapes, does not do well in our more fervid summers. We have never seen a good one this side of the Atlantic. The Osage Orange has many admirable qualities, but is not entirely hardy in all parts of the North. The Privet and Buckthorn, among the best, are very slow growers, and tax the patience of the planter.

Nothing that we are acquainted with meets all the requisites of a good hedge plant so com-

pletely as this neglected bush. It is a beautiful thing, cultivated simply as a flowering shrub, standing solitary beside the walk or carriage drive, or in masses in the midst of the lawn. Unlike the Dog-wood, its flowers will bear the closest examination, and a shallow dish filled with these flowers and leaves, is one of the most attractive ornaments of the center table in the month that boasts so much of floral beauty. Then it is a very hardy plant, thriving under



SWEET VIBURNUM.

neglect, and bearing any reasonable amount of shearing. In the hands of the gardener it is as plastic as the Box or the Yew, and may be moulded into any desirable shape. Planted in good soil and properly trained, it makes a thick hedge, impervious to the light, and strong enough to turn cattle.—It is easily multiplied from the seed, old pastures and woodlands abounding in young plants that have been sown by birds and cattle. In the neighborhoods where the shrub is already established, plants suitable for hedges are readily procured from the pastures. Those growing in the open ground, and that have been subjected to the severe cropping of the sheep and goats, are to be preferred.

In the grounds of R. L. Franklin, of Riverdale, may be seen a hedge of this plant only five years out. It is as perfect a specimen of live fence as can be found around any of our suburban residences, and that is saying much. As an example of the capabilities of the Sheep-berry for a hedge plant we regard that hedge as a great success."

We have no doubt that the plant will be valuable in the Northern sections of the country, though Mr. Mehan, who gives great attention to hedge-plants, informs us that near Philadelphia it has a somewhat rusty appearance in mid-summer.

Make Cuttings in Autumn.

A number of our hard-wooded plants are most easily propagated from cuttings. Among those most commonly multiplied in this manner from mature wood, are the currant, gooseberry, quince, grape, rose, etc., and it is probable that many of our ornamental shrubs, not usually propagated in this way, will succeed if properly treated. Any one who has ever watched the progress

made by a cutting will have found, that before any roots appear, there is a sort of growth going on. After the cutting has been for a greater or less time in the soil, there appears at the cut surface, and often at other points above it, an irregular whitish growth, which, if it occurred in the human subject, we should call "proud flesh," and that finally roots are pushed from this growth, which in gardener's language is called a "callus." When a twig is cut from the parent plant and placed in favorable soil, it puts forth an effort to live and form a new plant. It is without roots, through which to take up nourishment, and although it may apparently be vigorous for a while, and push out a new growth of stem and leaves, these are only produced at the expense of the material *already stored up* in the cutting, and after a brief season it dies. It is only when the cutting makes a root that it lives, and the first step towards making a root is the formation of the callus above mentioned; and this, like the leaf growth first alluded to, is formed at the expense of material on hand in the tissues of the twig or cutting. If this material be expended in leaf growth, as a general thing, no roots will be formed, hence it is the object of the propagator to induce the formation of a cal-

lus and roots rather than of stems and leaves. When artificial heat is used, the operator has the matter quite under his control, as he has only to keep the soil some degrees warmer than the air above it. In out of door propagation, in which our readers are most interested, these conditions are best attained by setting the cuttings in autumn, as then the soil is warmer than the atmosphere, and the callus (and even roots in some cases) forms before severe weather sets in. Cultivators well know that if a cutting be once callused, it is pretty sure to grow, and it often happens, if cuttings be made in fall and be kept in moist sand or sandy soil, out of the reach of severe cold, that the functions of vegetation will go on, and a callus be slowly formed, which, when the cutting is set out in the spring, quite surely emits roots. Quince cuttings done up into bundles, with their lower ends dipped for one third their length in thin mud, may be set in the cellar and occasionally watered. These will callus finely during the winter, and be ready to set in spring. Other cuttings would doubtless succeed with the same treatment. In setting cuttings of any kind, the soil should be firmly pressed about their lower ends, and attention to this will often determine success or failure. Currant, gooseberry, quince, and the

easier growing grapes, may have the cuttings made and put out as soon as the leaves have fallen. Where grape cuttings are to be used for in-door propagation, it is better to make them before the vitality of the wood has been impaired by severe cold weather. Cuttings of roses may be made as soon as the wood is well ripened. The leaves are removed, and the cuttings set in a cold frame, where they can be protected by covering from very severe frosts. Of course there are many plants that require all the skill and appliances of the experienced propagator, but those we have mentioned, and many others, may be propagated in the open ground with success by any one who will bear in mind the principles above indicated.

THE HOUSEHOLD.

Men's Shirts—A Woman's "Say."

[The "All about Men's Shirts," published in the August *Agriculturist*, page 293, has been the source of no little amusement. A great many write that "it's just my experience." The only one who attempts a solution of the difficulty, writes that "she thinks as a rule, ladies do not measure with enough mechanical accuracy. They are accustomed to loose garments with many yards and many folds, where an inch more or less is not noticed, while half an inch makes a great difference on a neck band that is designed to fit close to the neck, and yet not to come in so close proximity to the wind-pipe as to impede free breathing. I have seen a lady cut half a dozen shirts by one pattern, and assert's that they were all *just alike*. Yet I showed her by a careful measurement that there was a variation of $\frac{1}{2}$ to $\frac{3}{4}$ inch in the length of the neck binding. Again, a difference is made in gathering; and the amount of starching varies the ease of setting. Too much starch and wrinkled edges or folds will make a close fitting shirt neck very uncomfortable, which would feel easy if lightly starched and smoothly ironed. Still again, if the shirt is tight and draws behind the shoulders, it may pull back the neck binding, and make one very uncomfortable, especially when perspiring a little, so as to cause the shirt to stick and draw more than usual. I have found relief from former trouble, after getting one shirt to fit: 1st, by copying it with special care in cutting to have the pieces of exactly the same size, looking after the stretching of the fabric when laid down for cutting, etc.; 2d, by cutting the back and shoulders so that they cannot draw upon the neck; 3d, care not to over-wrinkle or contract the binding in gathering it on; 4th, care to have the neck band but lightly starched and uniformly ironed smooth on the inside...."]

Another urges us to publish anonymously her side of the subject, which we will do, though under protest, for the whole force of it seems to us to lie in the last sentence. Our observation is that those people are the happiest and get along best, who never say or feel "I won't yield." The best way is to harbor not so much as a thought about man's rights or woman's rights. These thoughts are always the beginnings of sorrow. The man and wife become one, and if they *feel* this, they will have no disputes about mine and thine, but consider each the others pleasures and miseries as *ours*. Well, here is the letter:

"I cannot claim to have had the supervision of a man's wardrobe quite 12 years, but would not the experience of a woman for 11½ years be of a little value? I think your extract was very properly taken from 'Hours at Home,' for I should certainly think a woman with such an experience, would have found it *very necessary* to devote quite a number of her hours to her home.—I think the fitting of that shirt was the fault neither of the garment, nor of the maker, but simply of the wearer himself. There is surely no inherent wickedness either in cotton or woolen cloth.

In Adam's fall We sinned all;

but most certainly sin does not (in *this* manner) entail upon the *manufactures* of our hands. When in the garden our first parents sewed fig leaves together and made themselves garments, it is no where recorded that *Adam's* did not fit him. I think, therefore, that although originally woman was equally guilty with man, yet during the lapse of ages, man has gradually gained the ascendancy in wickedness, and the excess of the evil in his nature manifests itself specially in animadversions upon his luckless shirts.—How rarely you hear of a very great or good man spending his time moaning over the fit of such a garment. I really think Washington, Lincoln, Napoleon, etc., had a few other matters that demanded and received a small share of their attention. But seriously, *I* have had no trouble. To be sure every one can not expect to possess such a husband as I have. I have made and altered a great many shirts, but not more than I have other garments. *My* husband never invites me to ride, in order that he may incidentally grumble about his shirts; and I insist upon it, the trouble is in the men and not in the garment. Of course it requires skill in cutting and making, patience in altering when necessary; but none the less does it require in the wearer the manly quality of being satisfied with a really good fit. Does man, imperfect man, alone, expect perfection? Women do not. I do not say they do not wish it. (I certainly should think the one that had the trouble with *that* shirt would.) Simply they do not expect it. I am willing to cut, fit, make, unmake, and remake garments both for myself and husband, but when a reasonable amount of time and attention have been given them, if they will not fit nicely, we wear them as they are; neither of us grumble. *My* husband is unselfish; he thinks it equally important that his wife's bonnet and dress should fit tolerably, as well as his own shirts fit to a T; and I think my husband's pants, coats and vests should require equal attention with his shirts. *My* husband (I speak not boastfully) has known no hand but mine to make his clothes since first I claimed his name, to say nothing of my own garments. Now where should I find the time for all this, if my whole life had been devoted to fitting and re-fitting shirts. It is simply a morbid feeling, and a true wife's duty not to yield to its demand."

Husk Mattresses—Cheap, Comfortable, and Healthful.

Our rural friends are very hospitable, when we visit them they treat us during the day with the greatest kindness, but they are often cruel to us at night, and most always consign us to a feather bed, in the smothering depressions of which we pass a sleepless night. That a feather bed is a fit thing to sleep upon, is an idea rapidly disappearing, we are happy to say; yet in many communities feathers still prevail, and they are looked upon as silk dresses are, in some measure an index of the wealth, or competence of the owner. It is quite time that all this was changed, and comfort and health consulted, rather than show. We say comfort,—for no one after having slept for a few weeks on a hard bed, would willingly return to feathers. Curled hair makes the very best mattress, but is expensive; the next best thing is corn husks, a cheap material, and accessible to all. The inner husks, or shucks, as they are called in some places, allowed to curl up a little, are often used without any preparation. A softer bed is made by slitting the husks in strips, half an inch or so in width; a fork may be used to facilitate stripping. The best-husk-bed we ever saw was made from the husks of green corn, shredded by drawing through a flax hatchel. Husk-beds should be opened about once in six months, the husks shaken out from the fine particles and dust, be sprinkled, and allowed to lay in the sun for a while. Treated in this way the husks will be almost as good as new. We give this timely hint, in order that at husking time, those who would enjoy the luxury of a husk bed may take measures to secure the necessary material.

Original Contributions to the American Agriculturist.

Hints on Cooking, etc.

Chess Pie.—For two pies of common size, take 4 eggs, 2 cups sugar, 1 cup cream, $\frac{3}{4}$ cup butter, 1 tablespoonful flour, and flavor with nutmeg. Cover the baking plates with crust, pour in the mixture, and grate nutmeg over it. There is no upper crust. When a pretty brown, try with a spoon as for custard. This is the best pie we ever ate.—Mrs. Samuel P. May, Grimes County, Texas.

Apple Pudding.—Beat 2 eggs well with 2 tablespoonfuls of sugar; add butter the size of a walnut, or 2 tablespoonfuls of cream, and 1 pint buttermilk. Add flour sufficient to make it a little thicker than for griddle cakes. Take one small teaspoonful saleratus, dissolve in a little warm water, and put in with about 4 large apples sliced (sour apples); stir it together well, turn it into a pudding pail (or some pail with a cover), and set in a kettle of boiling water, covering the kettle; boil hard 2 hours; serve warm with sweetened cream, or milk, or sour sauce.—"Novice," Portage Co., O.

A Cheap Tea Cake.—Take 1 cup sour cream, 2 cups flour, 1 cup sugar, 2 eggs, 1 even teaspoonful soda, flavor with vanilla. Beat the whole well together, and bake in a quick oven.—Mrs. M. Ingalls, Muscatine, Iowa.

Delicate Cake.—Take 1 cup flour, 1 cup white sugar, $\frac{1}{2}$ cup butter (stirred to a cream with the sugar before using), whites of 3 or 4 eggs stirred in last. Flavor with vanilla, rose water, or lemon.—Mrs. M. Ingalls.

Cream Cakes.—Take 2 cups flour, 1 cup butter, $\frac{1}{2}$ pint water; boil water and butter together, and stir in the flour a little at a time while boiling. When cold add 5 eggs beaten, and stir in $\frac{1}{4}$ teaspoonful soda. Make into cakes $\frac{1}{2}$ inch thick and 2 or 3 inches in diameter, and bake in an oven ready hot, not disturbing them until of a light brown. For inside or cream, beat together 2 eggs, 1 cup white sugar and $\frac{1}{2}$ cup flour, and stir in 1 pint of boiling milk, flavoring with lemon. Split the cake partly open with a knife, and put the cream inside.—None of writer unknown.

"Tomato Wine."—To "Old Subscriber," Newark. We seldom notice any letters not accompanied by the real names of the writers. You mistake; the *Agriculturist* (vol. 16, p. 236) did not say of the tomato wine or cordial made by the following recipe, "that it would puzzle the best judges to tell the difference between it and the best madeira," as you quote, but simply said, "to one skilled, even in grape vines, it is difficult to distinguish its origin." The directions are: "Select and mash well ripened fruit; press out the juice; add 1 pint water and 1 lb. sugar to each quart of the juice, and set away in a partially filled vessel to ferment similarly to grape wine. After fermenting sufficiently, put in tight kegs and keep in a cool dry cellar until spring, when it may be carefully drawn off and bottled, adding a small piece of ginger root to each bottle. When opened for use, a brisk effervescence takes place." [The "piece of ginger," if large enough, may make it a ginger wine, or ginger alcohol.—Ed.]

Making Pickles.—General Hint.—From an examination of a considerable number of the recipes most highly commended, and those found most valuable in our own experience, it appears that almost all kinds of pickles keep far longer and are better, if the first pickle be poured off after a week or two, and a new hot pickle be substituted. The first liquor extracts the disagreeable and easily fermenting and molding properties of the fruit or vegetables to be preserved.

Sweet Pickles.—Very Good.—The following directions, furnished to the *American Agriculturist* by Miss S. C. S., have been tested by us for several years, and are well approved: For SWEET APPLES, PEARS OR QUINCES.—For $\frac{1}{2}$ peck of fruit, pared and cored, make a syrup of 1 pint of vinegar and 2 lbs. of white sugar, and cook the fruit in it

until tender. Remove the fruit from the syrup to a jar, and pour over it a new syrup made by boiling 1 pint vinegar with $2\frac{1}{2}$ lbs. sugar, with a little bag of spices in it, containing say $\frac{1}{2}$ ounce each of cloves and cinnamon, and a $\frac{1}{4}$ ounce mace if liked; the spice bag to go in with the fruit also. The first syrup may be used for cooking other fruit. The pickles made as above keep almost any length of time, if simply covered. They are economical, are only moderately tart, and are much relished by most persons....PEACHES pickled are especially fine. They may be pared, or for general common use be pickled with the skins on, but must be separately wiped or rubbed with a cloth. Place the fruit in a stone jar, and pour on it a syrup made by boiling for each 12 lbs. of fruit, 4 lbs. of white sugar in 1 pint of vinegar, and cooking it. Place the jar in a kettle of cold water over the fire, and heat until the fruit in the jar is cooked tender. Spice with an ounce or so of cloves, put in a bag, and placed among the fruit. Some prefer sticking the cloves separately in the peaches. After standing 3 or 4 days, pour off and scald the syrup and return it. They will then keep well through the winter without further trouble.

Pickled Green Tomatoes.—The following method we have used several seasons, and the pickles have often been commended by visitors, and the recipe solicited. Cut the tomatoes in thin slices and scald them in weak salted water. Lay them in a jar, sprinkling each layer with a little sugar and a trifle of ground mustard and cloves. Scald sufficient vinegar to cover them, and pour it over while hot. After 8 or 10 days drain off the vinegar, and reject it. Scald a fresh supply and pour it over them hot. If horse-radish is available, a little of this grated or chopped fine added in the new vinegar is an improvement. The pickles thus made are tender, and keep a year at least with no mold. If left in the first vinegar, they soon spoil.

Tripe—A Good Food—Preparation.

—Tripe is a wholesome, nutritious food, and would be more generally used but for an unwarrantable prejudice, and the supposed trouble of preparing it. It is obtained from the larger stomachs of all ruminating animals, but usually from beef cattle. Two subscribers to the *Agriculturist*, furnish simple directions as follows: H. B. Cartwright (residence not given) says: "Scald the stomach sufficiently, to loosen the inside coating, in water about the same temperature as for scalding hogs. Hang upon a hook, and with a knife scrape off the inside coating, which will be easily removed if rightly scalded. Then cut in five or six pieces, boil for an hour, and scrape again until perfectly clean. After this boil until tender, when it is ready to use in any way."...Sarah Young, Washington County, O., writes: "Take the stomach or paunch while still warm after killing, and wash thoroughly in three or four waters to remove all disagreeable odor and taste. Cut in convenient pieces to handle, and taking a piece at a time on a fork, scald it in hot water, lay it on a board and scrape off the inner coating, which is easily done if scalded just enough."—It is then to be well washed and cooked as may be desired. Boiling will make it tender. It may then be pickled in vinegar, or kept in salt and water, changed daily. It is good cooked like soups, or broiled like steak, buttered, and peppered well. It is also good dipped in batter and fried.

To our Household Correspondents.

—We have quite a batch of recipes on hand, some waiting room, some on trial, some for their proper or best season, etc., and some are duplications of things already published.—We solicit continued contributions to this department—on other topics than mere cooking recipes. Let us have hints about clothing, furniture, etc.

Give the Particulars.—"Miranda" writes: "I desire to ask contributors to the Household Department to be a little more explicit. For example, one says, 'use flour or meal enough to make of proper consistence'—now that proper consistence is just what I want to know."—[The hint is worth noting. We have ever aimed at getting in all the particulars possible so as in every

case to make the matter so plain that the merest novice can follow it.—Some old housekeepers however, say that the *Agriculturist* simplifies too much—the Editors seem to take it for granted that ladies don't know how to mix the ingredients of a cake without having it all explained. We give the particulars for those who don't know—those who do can pass by such explanations.—Ed.]

Hints to Butter Makers.—(Derived from experience.)—When cream is to be kept a few days or a week in warm weather, a tea-cupful of salt to a gallon of cream will help to keep it from spoiling. Put the salt into the first gathering of cream, or into the clean cream pot.—Another item quite as important, is, to stir the cream frequently and thoroughly—once a day at least, twice or thrice is better....An ounce of salt to a pound of butter, after the buttermilk is out, is the rule of many good dairywomen who make butter for the Boston market. This is the minimum, I think. Some put 2 ounces to the pound. If to be packed it requires more salt than if put in rolls for immediate use.—S. C. W., of West Rutland, Mass.

To keep Burnished Steel from Rusting.

—The simplest, easiest and most rational way we have ever employed, is the following. Take a box (tin is best) large enough to contain all the articles and not half fill it. Then take some quick lime, break the lumps up and sprinkle them with water, so that they will fall to pieces and yet become not nearly slaked. Put this half-slaked lime into the box and bury the steel articles in it. They will keep bright and clean, and need only dusting when taken out. Steel or iron will not rust unless water or dampness comes in contact with them. The unslaked lime has such an affinity for water that no particle of moisture can exist in the box, so long as the thirst of the lime is not entirely slaked. So the steel remains bright. If the box is well closed, the lime will be good for six months, and perhaps longer.

BOYS & GIRLS' COLUMNS.

New Weights and Measures.

Congress has commenced talking about making some changes in the weights and measures used in this country, and by the time the present boys and girls very probably grow to be men and women, some new system will be generally adopted. It usually takes many years to introduce any great change, especially in things in common use; our weights and measures certainly need some improvement. It seems probable that the French system may be introduced to this country, and perhaps this or something like it, will come into use all over the world—it would be a great convenience to business men to have but one scale of measures in dealing with all other countries. As it is now, a merchant doing an extended business needs to study the arithmetic of almost every country, to know how to buy and sell goods, as almost every nation has its own system of denominations. The French system has some very great advantages. In it, all the denominations of every weight and measure increase by tens, just as in our United States money, ten of a lower denomination makes one of the next higher, and also as in writing numbers, each place to the left is tenfold greater. Suppose for example, that ten pints made one quart, ten quarts one peck, and so on with all other denominations of measure. Then writing the number of pints, say 7285, would at once give the number of quarts, pecks, and bushels, that is, 7 bushels, 2 pecks, 8 quarts, and 5 pints, without any trouble of dividing by 2, 8 and 4 to reduce it to bushels. In the same way inches, or ounces, written out, would show the miles or pounds in the amount. Then in multiplying by dollars and cents to find the cost of articles, all trouble of reduction would be done away with, and only the right place for the decimal point would have to be looked after; this would save many mistakes, and make our arithmetic much simpler. It usually takes boys and girls many months to master the mysteries of Reduction, Ascending and Descending; under the new system, much of this time and hard study might be saved. The children would have cause for thankfulness, and their teachers no less so.

In the French system, the starting point or unit from which all other denominations are derived, is the *metre*, equal to 39.37079 inches, or about $3\frac{1}{4}$ feet. This was obtained in the following manner. First, surveyors measured a line North and South (part of a meridian), long enough to enable them to determine the length of a whole

meridian, that is a line extending around the earth, passing through the North and the South Pole. Then one ten-millionth of one-fourth, or a quadrant, of the meridian was taken for the metre. It was a grand idea to make the circumference of the earth serve as a standard for measure. It is said, however, that later measurements prove the French surveyors to have made a very slight error, yet the standard thus obtained has been in use in France since the year 1840. Ten metres make a decametre; ten decametres, a hectometre, etc. One-tenth of a metre is called a decimetre; one-tenth of a decimetre, a centimetre, etc. The other denominations are found in most arithmetics, and need not be repeated here. Square measure is derived by squaring the decimetre. Solid measure is founded on the cubic metre. Liquid measure has one *litre* for its unit, equal to a cubic decimetre. The weight of one cubic centimetre of distilled water was taken as a unit, called a gramme, and thus all necessary weights and measures were formed. We hope to see the day when the absurdities of Wine measure, Beer measure, Dry measure, Cloth measure, Avoirdupois weight, Troy weight, etc., shall be out of fashion.

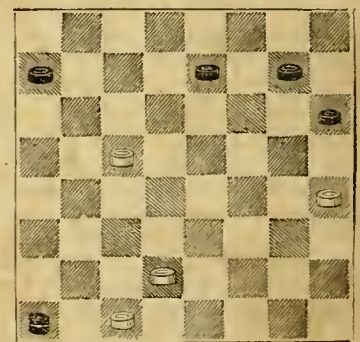
Very Fine Writing.

Among the Assyrians, the common mode of keeping records of national and historical events, was by stamping the words upon bricks, tiles, or cylinders of clay baked after the impression was produced. Mr. Layard, the celebrated explorer, in digging among the ruins of ancient Nineveh, found many specimens of these records, most of which were written in such small characters, that their forms could only be made out with the use of a microscope. A rude magnifying glass, made of rock crystal, was found, which had probably been used for such a purpose. At the present day, instruments are used for producing microscopic writing, exceeding anything the ancients could execute, and almost surpassing belief. By an apparatus called a pentagraph, the Lord's Prayer has been written in a space looking to the eye like a minute dot, and covering only the 365,000th part of an inch! Under a good microscope the letters are beautifully clear and legible. It has been calculated that in this way the whole Bible might be written in less than the twenty-second part of a square inch. In using the machine, the operator writes with a pencil attached to the end of a long lever, and the marks thus made are reduced almost infinitesimally by a series of levers properly arranged, and engraved on a glass plate, which is made to move over a diamond point. By means of photography, reducing the size of letters with suitable lenses, equally astonishing writing has been produced. We do not know of any specially useful application made of such writing, but it might serve a good purpose in preserving secret despatches in time of war, which would escape notice if the messenger were captured.

The Game of Checkers or Draughts.

POSITION NO. 8.—White to play and win.

Black.



White.

GAME NO. 8.—AYRSHIRE LASSIE OPENING. (*)

Black.	White.	Black.	White.
1—11 to 15	24 to 20	16—5 to 9	22 to 17
2—8 " 11	28 " 24	17—9 " 13	20 " 16
3—4 " 8(a)	23 " 19	18—13 " 22	16 " 11
4—15 " 18	22 " 15	19—22 " 26	11 " 4
5—11 " 18	32 " 28	23—26 " 31	4 " 8
6—10 " 14	19 " 15	21—3 " 7	8 " 3
7—7 " 11	(b) 26 " 23	22—31 " 26	19 " 16
8—9 " 13(c)	31 " 26	23—12 " 19	27 " 23
9—2 " 7	26 " 22	24—26 " 22	23 " 16
10—13 " 17	22 " 13	25—22 " 18	(c) 3 " 8
11—6 " 9	13 " 6	26—7 " 11(f)	16 " 7
12—1 " 26	30 " 23	27—15 " 19	24 " 6
13—11 " 15	25 " 22	28—14 " 17	21 " 14
14—13 " 25	29 " 22	29—18 " 4	23 " 24
15—7 " 10(d)	23 " 19	30—4 " 8	—Black wins.

(*) Is so named by Anderson, since he and Wylie played it in their two great matches at Edinburgh and Lanark, Scotland, 1839 and 1842. (a) 9 to 13, draws. (b) 25 to 22, draws. (c) 6 to 10, draws. (d) 5 to 9, draws. (e) The losing move, 24 to 20, draws. (f) Position No. 7. (See August *Agriculturist*, page 295.)

Lawsuit about a Comma.

Shortly after the commencement of the war of the Rebellion, some gentlemen in New York chartered a vessel for carrying freight. In the article of agreement this sentence occurred. "The said vessel is to carry 2100 tons or more provided she does not draw over 15 feet of water." Upon loading the ship it was found that when 1800 tons had been received, she drew 15 feet of water, and the captain, under instructions from the owner, refused to take in any more. Upon this, the company who had chartered her, refused to pay the price agreed upon, and a lawsuit for \$14,000 followed, which is now in progress. If a comma had been placed after the word *tons* in the contract, the meaning would have been perfectly clear, showing that 2100 tons were to be carried in any case, and more if the draft of the vessel would permit it with safety. As it now stands, the meaning is at least doubtful, and as both parties read it to suit their own interests, it will cost them many dollars and much trouble to have the matter settled by the lawyers.

Sudden Cure of Cholera.

Recently in Brooklyn, an Irish laborer found one of his fellow workmen lying insensible near his work, and at once concluded that he had been suddenly attacked with cholera, which was then quite prevalent in the neighborhood. Two physicians were at once called, and from the man's condition they believed him to be in "collapse," the state of the disease in which the patient sinks in utter prostration. They at once applied the most energetic treatment, removing the man's clothing, and nearly covering him with mustard plasters. Very soon he began to revive, and then to the astonishment of the bystanders he started away on a run, screaming lustily, and frantically tearing off the burning plasters. It turned out afterward that the supposed cholera patient had returned from a hard spree, from the effects of which he was lying dead drunk. The intolerable smarting roused him, and for a few days cured him of his dangerous disorder.



A Comical Picture.

Our artist sometimes amuses himself by drawing comical sketches. He says this one is intended to represent a lot of donkeys, and it will afford some amusement to compare the different figures and decide which is the greatest donkey.

Some of my Mistakes.

When I was a little boy, I felt sure men must be happy because they could do as they pleased. Many an hour have I amused myself by thinking what good things I could have when I grew up. I would buy a watch and a gun, and keep a horse, and eat as much candy as I pleased; these seemed to me some of the greatest things to be hoped for. I can ride, or hunt, or look at my watch, or eat candy now whenever I choose, but the pleasure I expected is not in them. I have no longer a boy's active limbs, quick eyes, and keen tastes, to enjoy them with. That was a mistake of the imagination; I wish all my boyish errors might have been as harmless. As I could not grow to be a man at once, I tried to do what older persons did. I thought it looked manly to smoke a cigar; and I well remember how I strutted, and carried my head on one side, and put on airs as I watched the smoke curling above my head. I am often reminded of it by seeing boys making the same mistake now-a-days.—But oh! how sick it made me; I paid dearly enough for my pleasure, and for a long time concluded to try some other way to be manly. Perhaps one of my greatest mistakes was in thinking how much I knew. I could not believe that father and mother knew best; so I often took my own against their advice, and in many ways have had to suffer for it. Then I made a sad mistake at school, when I regarded learning as a task to be performed for the pleasure of the teacher, instead of seeing that it was my opportunity to lay up stores which would be of the greatest service through life. I was forced by faithful friends to secure something of this treasure, but how rich I might have been in mind, could I have seen things as they now appear. Then I let some habits become fastened upon me which it took years to shake off, and I have been nearly half my life trying to mend the mistakes of the other half. I should not have spoken of these things, were it not that I see boys every day making the same mistakes, and preparing for the same regrets. Perhaps some of them among the readers of the *Agriculturist* will be helped to think by these thoughts of an old man, and thus avoid some of the mistakes of

UNCLE BEN.

Odds and Ends.

The little snarling, cooing "babes,"
That break our nightly rest,
Should be packed off to "Baby"-lon,
To "Lap-land" or to "Brest."
From "Spit"-head "Cooks" go o'er to "Greece,"
And while the "Miser" waits
His passage to the "Guinea" coast,
"Spendthrifts" are in the "Straits."
"Spinsters" should to the "Needles" go,
"Wine-bibbers" to "Burgundy;"
"Gourmands" should lunch at "Sandwich" Isles,
"Wags" at the Bay of "Fun"-dy.
"Bachelors" flee to the "United States,"
"Maids" to the "Isle of Man;"
Let "Gardeners" go to "Botany" Bay,
And "Shoeblocks" to "Japan."
Thus emigrate, and misplaced men
Will then no longer vex us;
And all who ain't provided for
Had better go to "Texas."

A Coat of Arms.—A New Yorker, rich by inheritance, acceded to his wife's desire for a "coat of arms" to be put upon the panels of their carriage, and drew a small mound in which was stuck a manure fork, with chanticleer upon it, rampant. "Why, what is this?" asked his wife in amazement. "This," said the man of money, "is our family coat-of-arms. My grandfather made his money carting manure; this mound and fork represent his occupation; the cock perched upon the top of the fork represents myself, who have done nothing but flap my wings and crow on that dunghill ever since." The carriage still has plain panels.

Answers to Problems and Puzzles.

The following are answers to the Puzzles, etc., in the September number, page 329. **Puzzle Picture.**—This contains a bear, a dog, and a squirrel, the forms of which can be made out by attentively observing the shape of the trees and shrubbery near the beehives....No. 225. **Word Puzzle.**—*Devil*: His occupation is evil; his character, vile; his offspring, he; his first victim, Eve; how he obtained this victim, lied; the sentence pronounced upon the victim and himself, die....No. 226. **Illustrated Rebus.**—"Many a slip between cup and lip."....No. 227. **Word Puzzle.**—*L, ell, L, L, L*....No. 228. **Conundrum.**—When there is one beat (beet) in a measure.

The following have sent in correct answers to puzzles. We have only room to give the names, without the numbers answered. C. A. Parsons, D. McKue, E. F. Wall, John D. Brown, H. Martin Kellogg, Willie B. Ruggles, John G. Esler, J. C. Stanley, R. L. Wells, Mrs. J. W. Scott, Hattie A. Goffie, J. Weatherbee, Libbie Limes,

Emily S. Hanaway, Mrs. James Tyler, S. C. D., Geo. H. Palmer, Charley Ray, John Jones, J. C. McDonough, L. H. F., and A. D. L., Bell S. Ward, Carrie Spangle, Mary A. Spangle, Wm. B. Phelps, G. & W. Foulk, Liabley Shaw, Nellie Coe, Allie McMillan, E. Kalb, Jennie Smith, B. K. Northrop, Henry F. Reynolds, Rufus G. Fuller, Isaac T. McLain, Lyde Harrison, Wm. P. Newlon, I. M. Patton, Elizabeth E. Patton, Alice Milligan, Elma M. Taber, Annie H. Charlton, Henry C. Hoover, A. G. G., A. L. H., W. H. Benedict, Dianthe Roads, R. W. Fair, W. R. Ballantine, M. A. C., Fanny E. Allen, Mary E. Elliott, Judson Crandell, H. P. Hagerman, Geo. A. Shepard, James W. Thompson, Eugenia Frank, W. V. Krittlinger, Cornelius Hoagland, Jr., E. A. Milner, M. Brownell, Adelle C. Dally, Marietta Weeks, Ellery W. Greene, John W. Cutter, Sarah E. Thomas, Kate Hower and Brother, Emily Reynolds, H. S. Loper, Maggie A. Burtis, Minard R. Bice, James E. Eshleman, Robert Robertson, Ransom G. W. Denison, Sarah A. Southwick, James C. Brantigan, Phunny Phello.

New Puzzles to be Answered.

No. 229. **Mathematical Problem.**—A farmer took to market the products of his farm, consisting of corn which he sold for 50 cents a bushel; wheat for \$1.75 a bushel; oats for 45 cents a bushel; and potatoes for 95 cents a bushel, from the sales of which, after deducting all expenses he realized a net profit of \$2,896.92, or 78 per cent. The number of bushels of corn he raised per acre was equal to one-third of the oats and potatoes, and half the wheat; and the number of bushels of potatoes per acre was equal to twice the quantity of oats and wheat, and 31 bushels over; and the whole number of bushels of all kinds was 4,554. Now, the number of acres of oats was equal to twice the number of bushels of oats per acre less 14; and four times as many as acres of corn, and twice as many as acres of potatoes, while the acres of corn were in proportion to the acres of wheat as 5 to 6. How many bushels did he raise of each kind, and how many acres of each did he have in cultivation?



No. 230. **Illustrated Rebus.**—A very obvious truth.

No. 231. **Mathematical Problem for Beginners.**—If a man sells his watch for fifty dollars, buys it back for forty dollars, then sells it for forty-five, how much does he make in the transaction? It looks as if he made fifteen dollars, but he didn't.



No. 232. **Illustrated Rebus.**—What we try to do.

THE LARGEST ROOM IN THE WORLD.—The "room for improvement." What will you do with your share?



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THE PET KITTEN. — FROM A PAINTING BY CARL MURL. — Engraved for the American Agriculturist.

Which is happiest, the child or the kitten? The one that loves most, would be the proper answer. Now Master —, you that tied a rattle-box to the kitten's tail a few days ago, to have fun in seeing her fright, this picture is for you to study and learn a lesson from. If you could hear the kitten purr it would sound very like "I love my master;" that certainly must give more pleasure than to hear the poor thing mew piteously when abused and frightened. The child who keeps a pet and cares well for it, is making the best feelings grow in his own heart, is cultivating a kind disposition, which will be a blessing to its owner and to others through life. It is a truth which should be printed in letters of gold, and learned by heart, that he who tries most to make others happy, secures most happiness himself.

Another "Owl Story."

A correspondent writes from Tioga Co., Pa.: "Early in July, little Mary closed the doors of her chicken and duck coops at night, as usual, leaving the old drake to stand on guard. The next morning at day-break; the old drake waked me by flapping his wings against the house at the head of my bed. I hastened to the door, and found him backing up to the door whipping and drawing a large

bird. I struck the bird over the head and he let go his hold on the drake, who fled around the corner, but soon came back, and seeing me holding up the enemy by the wings, he cheered me heartily. It proved to be a large Eagle-Owl, his wings measuring near five feet from tip to tip. The old drake received a severe wound in the breast from the owl's claws, but is now able to steal into the garden and steal cabbages, which he thinks he has a perfect right to, since he 'caught the owl,' as he and little Mary say. In truth the owl caught him, but caught more than he bargained for."

A Rich Man.

Governor Marcy, of New York, used to relate an anecdote illustrating that riches do not depend upon the amount a man possesses, but upon his condition of mind; some are poor with a hundred thousand dollars, others rich with less than one-fiftieth of that amount. A rough backwoodsman called upon the Governor one morning, and inquired if he was "Bill Marcy that used to live in Southport."—"Yes," said Mr. Marcy, who was quite curious to know who his visitor might be. "I told 'em so, but they wouldn't believe it—but you don't know me, do you?"—"Your face is familiar, but I can't call you by

name."—"My name is Jack Smith, and we used to go to school together thirty years ago, in the little school-house in Southport. Well, times have changed, and you have got rich since then, I suppose." The Governor shook his head, but the lumberman broke in, "Oh, yes you are, no use denying it, for you've been in office a long time, and have got lots of money, and I'm glad of it."—"I suppose," said the Governor, "fortune has smiled upon you since you left Southport."—"Oh, yes, I can't complain, I must say I've got along right smart. You see shortly after you left Southport, we moved into Vermont, and I reckon we cleared up more land than any other family in the whole State."—"And so you have made a good thing of it. How much do you consider yourself worth?"—"Well," replied the satisfied man, straightening himself up, "I don't exactly know how much I'm worth, but I think if all my debts were paid, I should be worth *three hundred dollars*, clear cash." He was the richer man of the two, although the Governor could no doubt have counted his thousands.

Question for Shoemakers.—A boy correspondent says, "If the first thing a shoemaker uses to make a boot is the *last*, what will make the boot last?"

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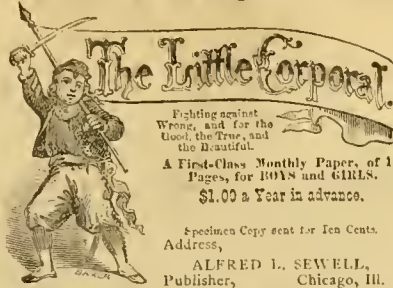
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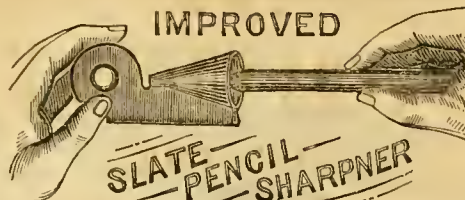
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Huron Co.	Norwalk	3-5
Licking Co.	Newark	3-5
Lake Shore Grape Growers.	Cleveland	10-12
Marion Co.	Marion	10-12
Morrow Co.	Mt. Gilead	2-5
Summit Co.	Akron	2-5
Wyandot Co.	Upper Sandusky	2-5

MICHIGAN.

Barry Co.	Hastings	Oct. 9-11
Gratiot Co.	Ithaca	4-5
Hillsdale Co.	Hillsdale	3-5
Ionia Co.	Ionia	3-4
Lapeer Co.	Lapeer	10-12
Livingston Co.	Howell	9-11
Shiawassee Co.	Owosso	3-5
Saginaw Co.	Saginaw	3-5
Washtenaw Co.	Ann Arbor	3-5

INDIANA.

Floyd Co.	New Albany	Oct. 1-6
Fulton Co.	Rochester	13-15
St. Joseph Co.	South Bend	4-6
Warren Co.	Williamsport	9-12

ILLINOIS.

Fulton Co.	Lewiston	Oct. 3-5
Greene Co.	Carrollton	9-12
Grundy Co.	Morris	2-5
Jefferson Co.	Mt. Vernon	9-12
Jackson Co.		18-20
Jo Daviess Co.	Galena	2-5
Kane Co.	Geneva	3-6
Kankakee Co.	Kankakee	3-5
M'Henry Co.	Woodstock	2-4
Pike Co.		9-14
Pope Co.	Golconda	4-6
Richland Co.	Olney	4-6
Saline Co.	Harrisburg	10-12

IOWA.

Clinton Co.	Farmersburg	Oct. 4-6
Ringgold Co.	Mount Ayr	4-4

MISSOURI.

Audrian Co.	Mexico	Oct. 9-12
Lewis Co.	Canton	8-12
Pike Co.		16-19
St. Louis Assoc.	St. Louis	1-6

SUNDRY COUNTY FAIRS.

Osage Co., Kansas, Burlingame.	Oct. 1-2.
Paducah & M'Cracken Co's, Ky., Paducah.	Oct 9-11.
North Albany, Oct. 2-5.	
North Riding of Wellington, Pergus, C. W.	Oct. 11.
St. Croix, St. Stephens, New Brunswick, Oct. 18.	
Sauk Co., Wis., Baraboo.	Oct 9-11.
Windham Co., Vt., Newfane.	Oct 3-4.

Commercial Matters—Market Prices.

The following condensed, comprehensive tables, carefully prepared specially for the *American Agriculturist*, show at a glance the transactions for a month, ending Sept. 17, 1866, and the exports of Breadstuffs from this port thus far, since January 1, together with the annual exports of Breadstuffs for a series of years, ending Sep. 1:

1. TRANSACTIONS AT THE NEW-YORK MARKETS.

RECEIPTS. Flour, Wheat, Corn, Rye, Barley, Oats.
30 days this m'th. 237,000 428,000 3,358,000 111,000 165,000 1,284,000
21 days last m'th. 232,500 363,000 3,820,000 115,000 23,000 1,292,000

SALES. Flour, Wheat, Corn, Rye, Barley.
30 days this month, 279,100 793,000 3,153,000 319,000 11,000
24 days last month, 181,000 447,000 3,867,000 159,000 15,300

2. Comparison with same period at this time last year.

RECEIPTS. Flour, Wheat, Corn, Rye, Barley, Oats.
30 days 1866. 237,000 428,000 3,358,000 110,000 165,000 1,284,000
21 days 1865. 236,000 1,275,000 3,373,000 109,000 167,000 761,000

SALES. Flour, Wheat, Corn, Rye, Barley.
30 days 1866. 279,100 793,000 3,153,000 319,000 11,000
24 days 1865. 331,900 2,032,000 2,318,000 97,000 5,500

3. Exports from New-York, January 1 to Sept. 15:

	Flour.	Wheat.	Corn.	Rye.	Oats.
1866.	672,185	250,054	8,886,516	187,189	966,580
1865.	970,697	1,646,846	1,506,398	154,214	54,673
1864.	1,553,282	10,998,797	709,293	453	31,185
1863.	1,882,899	11,700,100	7,292,261	409,157	116,097
1862.	2,234,591	15,393,811	8,640,113	1,031,616	66,537

4. Exports of Breadstuffs from the United States to Great Britain and Ireland, each of 20 years, ending Sept. 1:

	Flour, bbls.	Wheat, bush.	Corn, bush.
1866.	117,568	1,521,210	13,908,333
1865.	170,109	2,989,710	1,293,404
1864.	1,241,804	10,192,323	714,434
1863.	1,179,413	23,167,190	10,331,365
1862.	2,672,515	25,751,709	14,684,105
1861.	2,561,661	25,555,370	11,705,034
1860.	717,156	1,388,714	2,221,857
1859.	106,457	439,010	312,013
1858.	1,295,420	6,333,613	3,217,592
1857.	849,690	7,473,401	4,162,737
1856.	1,641,365	7,556,106	6,731,161
1855.	175,309	324,427	6,670,138
1854.	1,846,930	6,038,003	6,049,371
1853.	1,600,449	1,825,519	1,425,278
1852.	1,127,442	2,728,412	1,487,388
1851.	1,530,584	1,496,335	2,305,604
1850.	574,757	461,276	1,753,558
1849.	1,137,556	1,140,194	12,685,260
1848.	182,583	241,300	4,200,226
1847.	3,155,845	4,000,339	17,157,659
Grand Total.	24,513,323	141,101,791	126,235,154

5. Exports from the United States to the Continent of Europe for 12 years, each ending Sept. 1:

	Flour, bbls.	Wheat, bush.	Corn, bush.	Rye, bush.
1866.	4,285	68,111	41,803	245,651
1865.	23,261	113,315	11,385	97,529
1864.	109,511	333,819	13,269	13,965
1863.	213,579	2,243,814	68,957	435,205
1862.	625,672	7,617,472	222,074	1,612,926
1861.	142,129	3,452,496	107,145	247,358
1860.	49,243	178,031	19,328	—
1859.	51,388	27,815	25,719	—
1858.	303,100	390,428	16,848	13,100
1857.	483,344	2,875,633	548,590	216,162
1856.	748,408	2,610,679	282,083	1,975,178
1855.	7,763	4,972	308,428	33,569
Grand Total.	2,753,683	20,044,535	1,734,559	4,992,543

6. Exports from the United States to all ports, year ending Sept. 1:

	Flour, bbls.	Wheat, bush.	Corn, bush.	Oats, bush.
New York.	1,120,082	1,313,141	12,608,643	1,032,675
Other ports.	701,313	1,606,417	2,066,984	574,572
Total.	1,821,395	2,919,558	14,675,627	1,607,247

7. Exports from Canada to Great Britain and Ireland via St. Lawrence, year ending Sept. 1:

	Flour, bbls.	Wheat, bush.	Corn, bush.	Peas, bush.	Oats, bush.
1866.	20,150	43,560	1,271,171	1,188,061	2,803,386
1865.	273,352	1,209,014	162,941	245,383	1,400
1864.	318,214	2,506,504	51,040	552,005	169
1863.	687,986	5,732,377	1,578,458	691,099	9,624

We give above, in accordance with our custom, a series of very interesting tables, illustrative of the movements in Breadstuffs, not only for the past month, but for a series of years. These tables have been prepared from official and other authentic records, and may be regarded as thoroughly reliable. They leave us very little room for our usual notice of the month's business. The receipts of Breadstuffs have fallen short of the requirements of buyers since our last, and there has been a general rise in prices; the market closes less buoyantly. The export demand has been fair. There has been a great scarcity of prime wheat, which has been much needed by local millers. Provisions have been in fair demand, but have been depressed and unsettled in price. Butter and cheese have been in very liberal supply. Cotton has been more active, closing firmly and buoyantly. The receipts at this port, year ending Sept. 1, were: 668,575 bales; amount taken by spinners, same time, 379,720 bales; exports, same time, 495,309 bales; stock here Sept. 1, 1866, 68,408 bales. The total receipts at all the chief shipping ports, year ending Sept. 1, were 2,188,278 bales; and the exports therefrom, same time,

1,431,600 bales. Wool has been in rather more demand at about previous quotations. Hay has been less plenty, and has been in good demand at buoyant prices. Hops, seeds, and tobacco have been quiet at irregular figures.

CURRENT WHOLESALE PRICES.

	Aug. 11.	Sept. 17.
PRICE OF GOLD	118 1/2	145 1/2
Flour—Super to Extra State	\$5 65	\$6 00
Super to Extra Southern	9 85	15 00
Extra Western	6 75	12 50
Extra Genesee	9 60	12 50
Superfine Western	5 65	7 25
RYE FLOUR	5 25	6 25
CORN MEAL	4 50	5 00
WHEAT—All kinds of White	2 25	2 75
All kinds of Red and Amber	1 20	2 85
CORN—Yellow	90	86
Mixed	80	82
OATS—Western	48	57
State	60	61
RYE	71	1 05
BARLEY	Nonical.	1 20
HAY—Bale 100 lb.	75	1 20
Loose	85	1 25
STRAW, 100 lb.	75	1 25
COTTON—Middle, 100 lb.	31	36
HOPS—Crop of 1865, 100 lb.	15	15
FEATHERS—Live Geese, 100 lb.	20	85
SEED—Clover, 100 lb.	11 1/2	12 1/2
Timothy, 100 bushel	6 75	7 50
Flax, 100 bushel	3 10	3 50
SUGAR—Brown, 100 lb.	9 1/2	13 1/2
MOLASSES, Cuba, 100 lb.	47	65
Coffee—Rio (Gold price)	15	14
TOBACCO, Kentucky, 100 lb.	6	60
Seed Leaf, 100 lb.	5	12
Wool—Domestic Fleeced, 100 lb.	25	75
Domestic, pulled, 100 lb.	25	55
California, unwashed, 100 lb.	15	40
TALLOW, 100 lb.	12 1/2	12 1/2
OLE OIL—100 lb.	52 00	55 00
PORK—Mess, 100 lb.	31 75	31 00
Prime, 100 lb.	27 25	30 00
BEEF—Plain mess, 100 lb.	16 00	14 00
LARD, in barrels, 100 lb.	19	21 1/2
BUTTER—Western, 100 lb.	20	23
State, 100 lb.	30	30
CHEESE	5	5 1/2
BEANS—100 bushel	1 50	2 75
PEAS—Canada, 100 bushel	1 20	1 30
EGGS—Fresh, 100 dozen	20	24
POULTRY—Fowls, 100 lb.	22	23
Turkeys, 100 lb.	22	23
POTATOES—Mercers, 100 bbl.	4 00	5 00
Peach Blows, 100 barrel	—	—
POTATOES—Buckeye, 100 bbl.	2 25	2 75
APPLES—100 barrel	4 00	5 50
PEARS, 100 barrel	—	3 00

New York Live Stock Markets.

The supply during the past five weeks has been very good for a season of medium demand, as here shown:

WEEK ENDING.	Bees.	Cows.	Culves.	Sheep.	Swine.
Sept. 11.	5,580	57	1,023	23,534	9,391
Sept. 4.	6,639	134	1,277	20,910	16,432
Aug. 28.	6,290	84	1,357	25,640	11,282
Aug. 21.	5,852	107	1,143	25,068	11,123
Aug. 14.	6,675	79	1,341	29,411	11,330
Total per Month	51,136	461	6,044	116,496	59,538
Average for Week	6,227	92	1,209	23,300	11,908
do. do. last Month.	5,300	111	1,446	18,018	7,340
do. do. 1865	5,235	118	1,500	16,091	11,023
do. do. 1864	5,161	115	1,311	15,315	12,676
do. do. 1863	5,150	129	694	9,941	21,670

It will be seen that the average receipts of Cattle, Sheep and Hogs, have advanced materially. Beef Cattle have fluctuated, but close at about last month's prices, or at rates equivalent to 17 1/2 c. @ 18 1/2 c. per lb. dressed weight for a few extras; 17 c. @ 17 1/2 c. for really good cattle; 16 1/2 c. @ 15 1/2 c. for common; 15 c. @ 13 c. @ 12 c. @ no sale for inferior to worst. Milch Cows are in very little demand at any price. Excellent pasturage, produced by frequent rains since August 1st, have supplied milk enough without more cows. Prices range \$45 @ \$60 for poor and common, calf included; \$70 @ \$80 for good; \$90 @ \$100 and upwards for extras. Veal Calves are in fair request at 12 c. @ 13 c. per lb. live weight for the best; 11 c. @ 12 c. for fair to very poor. Sheep and Lambs, after being lower and higher, close at last month's figures, viz: 7 c. @ 7 1/2 c. per lb. live weight for best; 6 1/2 c. @ 5 1/2 c. for good to poorest; Lambs 9 1/2 c. @ 7 1/2 c. for extra good to poorest. Live Hogs are in better supply and prices down to 10 1/2 c. @ 11 1/2 c. for different grades.

PYLE'S SALEBRATUS AND CREAM TARTAR.

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THE GREAT AMERICAN TEA CO.,

Have selected the following kinds from their Stock, which they recommend to meet the wants of Clubs. They are sold at Cargo Prices, the same as the Company sell them in New York, as the list of prices will show.

All goods sold are warranted to give satisfaction.

PRICE LIST:

YOUNG HYSON, 80c., 90c., \$1, \$1.10, best \$1.25 per pound.

GREEN TEAS, 80c., 90c., \$1, \$1.10, best \$1.25 per pound.

MIXED, 70c., 80c., 90c., best \$1 per pound.

JAPAN, \$1, \$1.10, best \$1.25 per pound.

OOLONG, 70c., 80c., 90c., best \$1 per pound.

IMPERIAL, best \$1.25 per pound.

GUNPOWDER, \$1.25, best \$1.50 per pound.

ENGLISH BREAKFAST, 80c., 90c., \$1, \$1.10, best \$1.20 per pound.

Our Black and Green Mixed Teas will give universal satisfaction, and suit all tastes, being composed of the best Foo Chow Blacks and Mayone Greens.—English Breakfast is not recommended, excepting to those who have acquired a taste for that kind of Tea, although it is the finest imported. These Teas are chosen for their intrinsic worth, keeping in mind health, economy, and a high degree of pleasure in drinking them.

COFFEES ROASTED & GROUND DAILY.

GROUND COFFEE, 20c., 25c., 30c., 35c.—best 40c. per pound. Hotels, Saloons, Boarding-House keepers and Families who use large quantities of Coffee, can economize in that article by using our **FRENCH BREAKFAST and DINER COFFEE**, which we sell at the low price of 30c. per pound, and warranted to give perfect satisfaction.

Consumers can save from 30c. to \$1 per pound by purchasing their Teas of the

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Country Clubs, Hand and Wagon Peddlers, and small stores (of which class we are supplying many thousands, all of which are doing well), can have their orders promptly and faithfully filled; and in case of clubs, can have each party's name marked on their packages as directed by sending their orders to Nos. 31 and 33 Vesey-st.

Our friends are getting up Clubs in most towns throughout the country, and for which we feel very grateful. Some of our Clubs send orders weekly, some not so often, while others keep a standing order to be supplied with a given quantity each week, or at stated periods. And in all cases (where a sufficient time has elapsed) Clubs have repeated their orders.

Parties sending Club or other orders for less than thirty dollars, had better send Post-Office drafts, or money with their orders, to save the expense of collections by express; but larger orders we will forward by express, to collect on delivery.

We return thanks to parties who have taken an interest in getting up Clubs. And when any of them come to New York, we shall be pleased to have them call upon us and make themselves known.

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Evidence after Eight Months Trial.

TRUSTEE DEPARTMENT, Fourth Auditor's Office, }
July 31st, 1866. }

GREAT AMERICAN TEA CO., 31 and 33 Vesey-st., New-York: GENTLEMEN,—Accompanying this, I send you our regular monthly Club list, which you will perceive is still increasing in proportions. We have now tried your Teas and Coffees for upwards of eight months, and have come to the conclusion that we get as good an article from your house, and at about half the price that we would be forced to pay our merchants here.

I congratulate your Company at the great success that has crowned its efforts in its endeavors to lighten the burden of high prices borne by our laboring people; and also congratulate your Club upon its good fortune in procuring these luxuries of life at prices so fair and reasonable. Hoping you will continue to receive a liberal share of public patronage. I am, sirs, very respectfully yours,

L. CASS CARPENTER.

2 lbs. Japan.....	H. H. Knight.....	at \$1.25.....	\$2.50
1 lb. Green Coffee.....	do.....	at 85.....	85
1 lb. Japan.....	Miss Duffy.....	at 1.25.....	1.25
1 lb. do.....	Miss Allen.....	at 1.25.....	1.25
1 lb. do.....	M. Adee.....	at 1.25.....	1.25
1 lb. Oolong.....	W. S. Waller.....	at 1.00.....	1.00
2 lbs. Imperial.....	L. D. Roberts.....	at 1.25.....	2.50
1 lb. Japan.....	C. Becker.....	at 1.25.....	1.25
1 lb. Green Coffee.....	do.....	at 85.....	85
5 lbs. Rio Coffee.....	W. Nirty.....	at 28.....	1.40

4 do. Green Coffee.....	W. Sticham.....	at 35.....	1.40
2 do. Oolong.....	S. R. Brown.....	at 1.00.....	2.00
2 do. Young Hyson.....	D. S. Holland.....	at 1.10.....	2.20
1 lb. Gunpowder.....	do.....	at 35.....	2.80
3 lbs. Green Coffee.....	Mrs. Dooley.....	at 1.00.....	2.00
2 do. Oolong.....	do.....	at 1.25.....	1.25
1 lb. Imperial.....	Trewalt.....	at 1.35.....	1.35
1 do. Japan.....	Smead.....	at 1.35.....	1.35
1 do. Imperial.....	do.....	at 1.35.....	1.35
1 do. Mixed.....	J. A. Dornal.....	at 1.00.....	1.00
3 lbs. Green Coffee.....	R. J. M. Gill.....	at 40.....	1.20
1 do. Roast Coffee.....	S. J. Gass.....	at 40.....	80
2 do. do.....	do.....	at 1.25.....	1.25
1 lb. Japan.....	R. Goodhurst.....	at 1.25.....	2.50
2 lbs. do.....	do.....	at 1.25.....	2.50
1 lb. Imperial.....	do.....	at 1.25.....	2.50
2 lbs. do.....	do.....	at 1.25.....	2.50
1 lb. do.....	do.....	at 1.25.....	2.50
10 lbs. Rio Coffee.....	De Mowbray.....	at 28.....	5.00
5 do. Oolong.....	do.....	at 1.00.....	5.00
1 lb. do.....	H. Pitts.....	at 1.00.....	1.00
1 do. Souehong.....	do.....	at 1.30.....	1.30
1 do. Japan.....	B. Meser.....	at 1.35.....	1.35
1 do. do.....	J. G. Sachden.....	at 1.35.....	1.35
2 lbs. Roast Coffee.....	C. B. Parkmann.....	at 40.....	80
10 do. Green Coffee.....	D. M. Lawrence.....	at 35.....	3.50
1 lb. Gunpowder.....	A. Watts.....	at 1.25.....	1.25
1 do. Ground Coffee.....	do.....	at 40.....	40
2 lbs. Green Coffee.....	J. Cox.....	at 55.....	70
5 do. do.....	Mrs. Ramsay.....	at 1.00.....	5.00
4 do. Imperial.....	Putney.....	at 1.25.....	5.00
2 do. Oolong.....	do.....	at 1.00.....	2.00
3 do. do.....	A. Thomas.....	at 1.00.....	2.00
1 lb. do.....	T. H. Brooks.....	at 1.00.....	1.00
1 1/2 lbs. Young Hyson.....	do.....	at 1.25.....	1.88
1 lb. Ground Coffee.....	do.....	at 40.....	40
1 do. do.....	F. Dutton.....	at 40.....	40
1 do. Oolong.....	do.....	at 1.00.....	1.00
1 do. do.....	A. S. Sturtevant.....	at 1.00.....	1.00
2 lbs. Souehong.....	J. F. Burr.....	at 1.30.....	2.40
1 lb. Japan.....	J. M. Adams.....	at 1.25.....	1.25
1 lb. Gunpowder.....	do.....	at 1.25.....	63
5 lbs. Roast Coffee.....	C. Colnes.....	at 40.....	2.00
1 lb. Japan.....	E. Kenay.....	at 1.25.....	1.25
1 do. Oolong.....	J. Cook.....	at 1.00.....	1.00
1 do. Gunpowder.....	do.....	at 1.25.....	1.25
2 lbs. Japan.....	S. A. Thomason.....	at 1.25.....	2.50
3 do. Roast Coffee.....	do.....	at 40.....	2.00
5 do. do.....	F. H. Campbell.....	at 40.....	2.00
1 lb. Gunpowder.....	do.....	at 1.25.....	1.25
1 do. Oolong.....	C. S. Tinsett.....	at 1.00.....	1.00
1 do. Ground Coffee.....	do.....	at 40.....	40
2 lbs. do.....	M. Cross.....	at 40.....	1.20
1 lb. Souehong.....	do.....	at 1.30.....	1.00
1 do. Oolong.....	S. M. Wooley.....	at 1.00.....	1.00
1 do. Ground Coffee.....	do.....	at 40.....	40
1 lb. do.....	W. H. Bartlett.....	at 40.....	80
2 do. do.....	M. Burnett.....	at 40.....	80
1 lb. Oolong.....	J. E. Brady.....	at 1.00.....	1.00
1 do. Young Hyson.....	E. Goodrich.....	at 1.25.....	1.25
1 do. Japan.....	do.....	at 1.25.....	1.25
2 lbs. Green Coffee.....	do.....	at 70.....	70
5 lbs. Ground Coffee.....	L. Carpenter.....	at 40.....	2.00
1 lb. Imperial.....	do.....	at 1.25.....	1.25
1 do. Oolong.....	do.....	at 1.00.....	1.00
1 do. do.....	M. St. Clair.....	at 1.00.....	1.00
2 lbs. Imperial.....	do.....	at 1.25.....	1.25
2 lbs. Gunpowder.....	F. Armstrong.....	at 1.00.....	2.00
1 lb. Oolong.....	do.....	at 40.....	2.00
5 lbs. Roast Coffee.....	M. Burnett.....	at 40.....	80
2 do. do.....	do.....	at 40.....	2.40
6 do. do.....	R. Doyle.....	at 40.....	2.40
1 lb. Imperial.....	do.....	at 1.55.....	1.35
1 do. Oolong.....	do.....	at 1.00.....	1.00
1 do. Souehong.....	Edwards.....	at 1.20.....	1.20
2 lbs. Oolong.....	R. Caff.....	at 1.00.....	2.00
2 do. Ground Coffee.....	D. Green.....	at 40.....	80
1 lb. Souehong.....	J. H. Robinson.....	at 1.20.....	1.20

\$131.56.

N.B.—All towns, villages, or manufactories, where a large number of men are engaged by CLUBBING together, can reduce the cost of their Teas and Coffees about one-third by sending directly to the GREAT AMERICAN TEA COMPANY.

*** If we needed any endorsement of our reliability, the complimentary notice we received in the editorial columns of the July number of this paper, would be sufficient, as all its readers are fully aware of the entire reliability of the American Agriculturist. Address

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The vast South, abounding with a tropical wealth of climate and vegetation unknown to other countries, and possessing all the elements, in its geographical position and the resources of its mines and soil, to make a people great and wealthy, is thrown open to the industry and enterprise of the young men of the nation; while the West, with its broad beautiful lands—the richest under the sun—and with silver and gold for the millions, is beckoning them to come.

I offer at my Institution at Poughkeepsie, N. Y., on the Hudson, and at Chicago, Ill., the best system of Practical training ever devised to qualify Young and Middle-Aged Men for active, successful business, and guarantee situations to all graduates who desire and merit the assistance of the College Agencies.

Let our Young and Middle-Aged men, our artisans and clerks, men of business, and the graduates of our colleges, North and South, avail themselves of an opportunity which is seldom offered in the history of a nation to acquire a competence, and hew out for themselves an honorable career.

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AMERICAN AGRICULTURIST

FOR THE

Farm, Garden, and Household.

"AGRICULTURE IS THE MOST HEALTHFUL, MOST USEFUL, AND MOST NOBLE EMPLOYMENT OF MAN."—WASHINGTON

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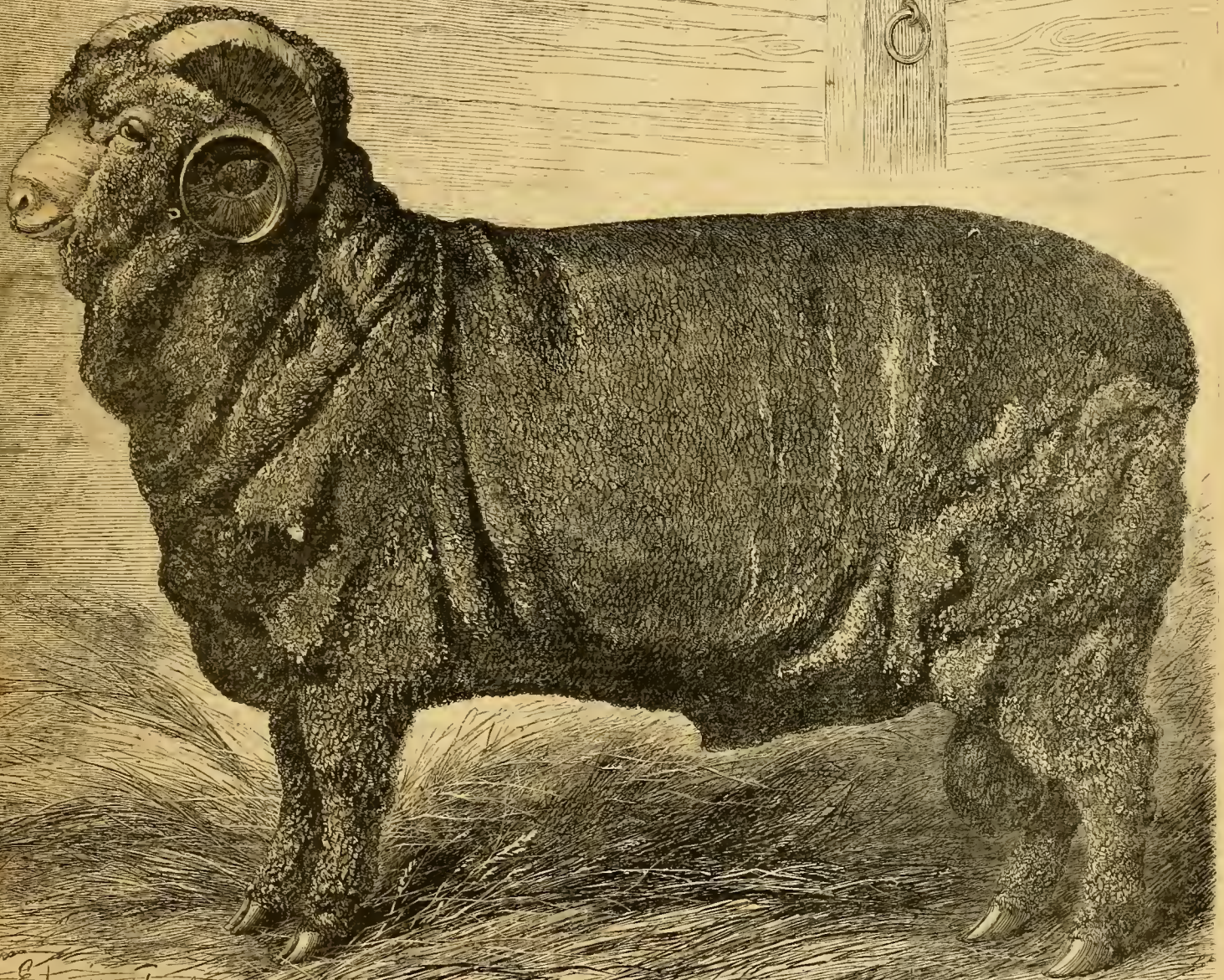
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NEW SERIES—No. 238.



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MERINO RAM "GOLDEN FLEECE."—BRED AND OWNED BY E. S. STOWELL, CORNWALL, VT.—Drawn and engraved for the American Agriculturist.

We selected this ram as best representing his breed of any at the New England and Vermont Fair at Brattleboro, and our artist produced, in our view, an admirable portrait. Golden Fleece is 4 years old, and was this year winner of the sweepstakes prize as the best merino ram of any age on the ground, and of the 1st prize in his own class, (Rams 3 years old and over.) His fleece, this year, (unwashed of course) weighed 26½ lbs.; that of 1865 weighed 26½ lbs.; it

would be interesting to give the weight of cleansed wool, but we cannot. The excellence of the animal may be judged by the fact that the flock of which he is the leader, and to a considerable extent the sire, bore off 6 first and 3 second prizes, besides the 2 sweepstakes prizes at the above named fair. He exhibits remarkably the compactness, solidity and depth of carcass, with the desirable shortness of legs, which are well woolled down, the full dewlap with the

abundant wrinkles and folds of the Vermonters, together with the astonishing oiliness of fleece. Such animals are held at wonderfully high prices,—\$5,000 to \$15,000. The latter price has, we learn, been refused for Golden Fleece. This breed, the American Merino, originated from the careful breeding, for many years, of Spanish Merino sheep by Stephen Atwood, of Conn., and subsequently by Edwin Hammond, of Vermont, and is now widely disseminated.

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AMERICAN AGRICULTURIST.

NEW-YORK, NOVEMBER, 1866.

There is a northern army marching southward with power. The winds are its scouts, and Jack Frost is on the picket line. Its skirmishers are in the forests of Maine; they fill the Adirondacs, and skirt the chain of great lakes. Some daring companies have pushed far in advance of their reserves into the prairies and the valleys of the West. Behind them comes the grand army in its march to the sea, leaving no green thing behind it, save the cedars and pines with which it seems to fraternize. But we have weapons and resources, which will enable us to sustain the siege. Then, too, we have one great ally, but for whose partial withdrawal, to attend to business farther South, we should not experience the present attack. This ally is the Sun, who fights for us by day, but leaves us to take care of ourselves by night. Our resources are wood and coal, and peat, good shelter and the abundant corn. The first nippings of the frost should have set us to finishing up farm work, and making ready for winter. When we cast our eyes over the hints for November given in previous years, we feel the need of ten times the space we have to make suggestions upon every important subject, but with so little space as we have we must be somewhat general in our hints. First, however, a word about

Permanent Improvements.—Multitudes of farmers and their families are satisfied with their present homes, but many others want to move. They are looking West or South, and are ready to take a good offer and clear out. The result of this is, that they do not half take care of the farms they are on, and if they sell at all, they will not get half the price they might. We say then, wherever you are, make the surroundings as attractive as possible. Make permanent improvements, good buildings, good fences, walls, etc., lay underdrains, reclaim swamps, and in short, work as if you were going to live in one place all your life, and your children after you. So you will have the comfort, as you go along, of seeing every thing improving, and such investments are safe and usually pay a good interest, if not annually, they certainly increase the value of the farm. But do not let any work upon the farm nor the material welfare of yourself and family lead to the neglect of the moral and intellectual.

The Common School should have the solicitous care and attention of every citizen, no matter what his profession, or how light his family responsibilities. Statistics bear us out in saying that the poorest schools and the least attention to education exist among the most purely agricultural districts; and it is also true that in more populous sections farmers, as a class, are not the ones to forward efforts for better and more thorough schools. The great safe-guard of our liberties is universal intelligence. A good public school is a security to any community against petty thieving, stock burning, orchard robbing, and a thousand other annoyances from bad boys and bad men, which can hardly be overestimated. The contamination of one's children by ignorance, which is almost always vicious and the cause of poverty, should be provided against by securing the very best school houses and the best teachers for all the children of the community. This is every man's and every woman's business, and a duty for which an account must be rendered as much as for the heartless neglect of the hungry and naked. It is not necessary at this season to direct attention to

The Poor, for we have them always with us. It is much pleasanter of a winter night to think of those who have been and are warmed and fed by our unostentatious charities, than of those to whom it may have been said, "depart in peace, be ye warmed and filled (by somebody else)." This month occurs the usual season of Thanksgiving, which, formerly observed by only a few of the older States, has now become a National festival.—May this be among the many causes for thankfulness of our readers and of ourselves, that as God has prospered us, God's poor have shared his bounty by our hands.

Hints about Work.

To those of our readers who read the October Hints we have little to say under the heads of *Buildings, Cellars and Ice Houses*, that will not seem repetitions. In short, put all in perfect order for cold weather, so far as repairing, cleaning, whitewashing and painting go. There is one important subject which might well have been dwelt upon last month, namely

Cisterns.—Old ones should be cleaned out if they get low during Indian Summer weather, when we often have little rain for some weeks, and they should be protected from the action of frost. Clean caves troughs, pipes and conductors of leaves and rubbish, and make every thing ready for winter. New cisterns may be set at this time, and where running water cannot be secured either at the house or stock-yard, capacious cisterns certainly should be. It is very easy to make a cistern in any soil in which a pit may be cut down with perpendicular sides. All that is necessary is to lay on a good even coating of cement directly upon the sides and bottom of the pit, which may be about 8 or 10 feet in diameter. Lay a flatish boulder on the bottom in the middle to stand upon, and near it make a depression into which all sediment may be made to flow, to be pumped or dipped out. Such a cistern may be covered with plank and 2 feet of soil, or by a dome or jug-shaped top, all below the surface and below frost. To construct this, make a frame of boards going from a center-post to the sides, and form the top with a smooth surface of hemispherical form by filling in with pieces of wood, and finishing off with clay or soil sprinkled and smoothed off. On this lay a coat of cement mortar, and a grouting of stones 6 inches thick. A half-barrel tub should be set in the dome in the middle, or a little to one side, for a "man-hole." Water enough falls upon ordinary farm buildings for all the stock that they can cover. After all, cisterns are a poor substitute for running water brought to the barn in pipes.

Horses.—In November we expect to get all our stock into the barns, and should take good care of them. There are no animals, however, that with plenty to eat will bear the cold so well as horses—full-grown horses. "Weathering" stunts colts shockingly. We have no doubt of the truth of the statement, that farmers in Vermont frequently winter their horses in the open meadows with barely a shed to run under, giving them a little hay or straw only during ice storms, when they cannot paw down through a foot or two of snow and get at the grass and clover aftermath, which was left for them. They are said to grow fat upon such treatment. Nothing is worse for horses than too much blanketing and tender care. Keep them clean—they can't be too well groomed—but let them have fresh air and cold air, plenty of it, but not in draughts through windows, floor cracks, etc. When they are sweaty, rub them and blanket them until dry, and for an hour or two after they are cool. After grooming, a linen cover may be put on to keep the coat down.

Colts ought to be accustomed to being handled very young, and may be kept in stalls or loose boxes. Never use the whip, but try the efficacy of a little sugar instead. (It will pay even at 16c. per pound.) Any young horse is much easier coaxed than whipped, and punishment is rarely necessary.

Bees should be pushed forward in fattening as fast as possible. Be careful not to over-feed, but judiciously increase and vary the feed so as to secure always good appetite and digestion. Water regularly; keep salt always before them; feed ground or cooked grain; never let them worry for a meal, but be ready as soon as the time comes; also never prepare their food before them, making them wait half an hour, restless and thrashing about, but prepare for the next meal while they are eating. See that cattle are fed uniformly the same amount of grain, roots, oil cake, etc., daily, or increase with regularity. Variety and occasional changes of feed are well, and most economical.

Cows.—As the quantity of milk decreases, its richness in butter may be made to increase by proper feeding, and it is worth while to take advantage of

the very high price which butter brings. We heartily wish farmers could realize the retail prices asked in the cities and large towns for their products—butter 65 cents per pound—think of it; get it if you can—though 35 cents will pay. Examine hay for evidence of ergotized seed (grown three or four times its natural size—the effect of a disease). This probably is the cause of abortion in cows, which has been so disastrous in many sections of late years. Any cow that is ailing in the least, should be removed from others. If one of a herd elinks her calf, three or four may follow suit, and probably will. Filthy stables provoke abortion.

Young Stock of all kinds should be kept vigorously growing all winter. Warm dry yards, sheds or stables, some grain or roots, and plenty of fresh water and salt, with regular care, will ensure thrift and much better sized animals than if the winter treatment checks their growth, as is usually the case. Their manure will be worth something, too.

Sheep.—If sheep are in poor condition now, they must be gradually brought up; feed oats in the sheaf, a few daily, and some roots and good hay. When grass fails, hemlock boughs once or twice a week are good. Let all have the range of dry yards or fields, and warm sheds well ventilated. The period of gestation in ewes is about 5 months, (152 days,) and a flock in good order is rarely served in less than 3 to 5 weeks. If sheep put up to fat at this season, sell in February, March, or April for enough to pay their present value, and for all the grain fed to them, there is a profit. Their manure will be full pay in many places.

Hogs.—Watch the pork market, and if there is a certainty of taking advantage of high prices before the general killing takes place, do so, otherwise complete the fattening. If nowhere else, there is at least a large gain in the manure heap. Refer to articles on hog killing in the January number (p. 12). In killing all squealing and fighting is stopped by shooting a wooden plug into the head between the eyes, easily done, and a most humane practice; use very little powder. Feed only cooked or soaked food; ground if possible.

Poultry.—See article on fattening fowls. It is equally applicable to other poultry. For ducks for your own table, feed meal scalded and mixed with celery leaves chopped fine, for 2 or 3 weeks before killing. It gives them the flavor of canvas-backs. In warm, light houses, spring pullets lay all winter.

Manure.—The value of the manure of animals stands in direct relationship to the value of the food they eat. Poultry have the richest food; men next, hogs next, fattening cattle, horses, sheep, cows and growing stock follow in about this order. The feed of well fed bees is usually richer than that of horses, and so is that of fattening sheep sometimes, but this varies. Here, however, is a true measure of the value of the droppings, and of the care that should be taken of each kind. The farmer's business is to make manure just as much as it is to make money, and he should do it first by saving. Hen-dung is easily saved by making the birds roost over a floor sprinkled with earth, which is swept up and freshly earthed every week. Calculate to have $\frac{1}{2}$ manure and $\frac{2}{3}$ earth. Save the next on the list on precisely the same principle—that is, mingling it with $\frac{2}{3}$ its bulk of dry fine soil, but do it every day or two.—See the box, etc., figured on page 319.—Hog manure is saved and preserved by mixing it with earthy or vegetable matters, anything that will decay, but especially articles soft, porous and bulky, as weeds, sods, bogs, peat, etc. The droppings of horses are very profitably added either to the manure of the sty, or mixed with that of neat stock, especially to that of young cattle and cows, which is thus brought up to a higher standard. Manure of all other kinds is kept and improved by admixture of straw, leaves, etc., and especially by being laid up in heaps over beds of rails, so that the liquor which leaches from it naturally, or after being pumped on, may be returned and pumped over it again. Where this can not be done, it should be mixed with sods, dry peat, or muck, or even simple soil, and laid by a

compost heap as fast as it accumulates. The manure harvest is from November to May.

Plowing.—By all means do as much plowing this fall as possible. Use a plow that will lay a furrow as flat as a floor. Plow in manure deep for corn, potatoes and root crops, but not for small grains. Leave no manure on the surface, except fine composts that may be harrowed in. Land is well prepared in this way for seeding in spring to clover or grass without an accompanying grain crop.

Grain Fields.—Prevent water standing anywhere on winter grain or young grass, by

Surface Drains.—Make surface water courses to conduct off water from spots where it may wash and do damage, by cutting channels or by banking on dirt or gravel. Continue

Under-draining also, as long as the ground is not frozen hard. Laborers are easier got in November than at most other times. The ditches must be well filled, and the earth pounded down, or the water will wash them out in the spring.

Wood.—See article on splitting. It is a good time now to gather the "down stuff" in the wood lot, which is useful for light quick fires.

Orchard and Nursery.

When we advocate autumn planting, we do not mean to advise planting in winter. In general, the present month is too late to plant, and it is much better to heel-in the trees, received thus late, than to set them. Trees properly planted will not need stakes, but if it must be done to save a weak or injured one, a single stake with a twisted straw rope, as described in April, 1863, will be best. See page 399 for protecting young trees during winter.

Cider Making still continues. Good, sound, and clean apples, absolute cleanliness of the casks and every thing used in the process, are essential to the production of the best article. If what the Germans call apple wine (Apfel-Wein) be desired, follow directions for grape juice in Sept., page 325.

Cellars.—Close up only when there is danger of freezing. Fruit should be kept at a uniform low temperature—as low as it can be without injury. The changes that go on in ripening fruit, generate heat, and this should be borne in mind. They also cause the liberation of injurious gases, and when fruit is stored in cellars under dwellings, ventilation should be provided. An opening into the flue of a chimney is as good as any other.

Cions may be cut at any time after vegetation has ceased. Select this year's shoots with short joints, tie in bundles, label carefully, and keep cool and from drying. Damp sand or earth will do, but sawdust is better, as it will not injure the grafter's knife.

Labels.—Trees from the nursery often have the labels closely wired to a limb; these should be loosened, or what is better, taken off altogether, and have the small copper wire replaced by one of lead or by a leather strap. Have every tree labelled for convenient reference, and so recorded as to leave no possibility of losing the name.

Manure can be put upon the orchard at any time after the ground is frozen. Manure the whole surface, and do not make a mound around the trunk.

Stocks must be taken up before the ground freezes. Those intended for root-grafting are to be assorted, tied in bundles and packed in the cellar in sawdust. Take up all apple and pear stocks, and preserve those too small to graft, to set again next year.

Seedlings generally have a hard time of it the first winter. Leaves and the boughs of cedar and other evergreens make a good protection.

Cuttings, if the ground is open, may be set. See article on cuttings in October, page 364.

Kitchen Garden.

Whenever the ground is open, something may be done to help along next spring's work. See last month for suggestions about manures. Clear up all rubbish, lay drains, and do all preparatory work whenever the weather will allow.

Pits for Vegetables, made as directed in October,

page 362, will need a gradual covering; or, if the roots have been put in heaps, pits may yet be made.

Cabbages.—Plants in cold frames are to be fully exposed every mild day. Take in the late crop, as directed last month. Cattle relish the loose leaves.

Celery should never be put in too soon, it will stand light frosts, but should not be thoroughly frozen. See last month's directions for wintering.

Horse-radish.—Dig and cover in pits, as directed for other roots. Save small roots to set next year.

Hot-beds.—If not already done, procure a lot of good soil and put under cover, or cover with boards.

Parsnips and Salsify may be dug whenever the ground is open, but it is best to have a supply for use in cold weather preserved in sand in the cellar.

Rhubarb.—Whenever the ground is open, new beds may be made, by dividing the old roots, taking care to keep an eye or bud with each, and setting deeply in richly manured soil.

Spinach.—Cover with straw or leaves.

Fruit Garden.

The general directions of last month may be followed wherever they will apply. In locations where the climate will admit of it, planting of dwarf trees, blackberries, currants, etc., may continue. Manure as directed under orchard.

Figs Trees are to be laid down and covered with earth, or if there is danger from much water, take up with a large ball of earth and put in the cellar.

Grape Vines.—Prune as soon as the leaves are off—this is when to prune. How to prune will depend upon the vine and the person's knowledge of its manner of growth. We can only give general directions. Look at your vine now that it is divested of leaves. All that is seen of the wood of the present year's growth, has borne and done its duty. The buds upon the canes, that now look so insignificant, are next spring to throw out vigorous shoots and bear fruit. If all the buds are left, there will be many weak shoots and little fruit. If this year's shoots are cut back to two or three buds, these remaining buds will push out vigorous shoots and produce much better fruit than if the vine had been allowed to run wild. Have this in mind whenever the vine is pruned—the buds, and not the wood now on the vine, are to produce the fruit. Prune understandingly. We have given full directions with engravings in previous numbers.

Grapes may be preserved a long time, if put in boxes and kept at an even low temperature. The Catawba and Diana are the best keepers. Grapes with a tender skin, that breaks at the least pressure, are not good for keeping.

Pears.—The winter sorts are to be kept as heretofore recommended for winter apples. Keep them cool until the time of their ripening, and then bring them into a warm room.

Raspberries.—Tender kinds are to be bent down and covered with earth. If the old canes have not been cut out, do it at the time of laying down.

Strawberries.—There is no need of covering until the ground is crusted. The object of covering is, to avoid alternate freezing and thawing. Too much covering, provided it smothers the plants, is worse than none at all.

Flower Garden and Lawn.

All work here will be governed by the character of the season. In fine weather, grading, making new walks, new borders, etc., may be carried on. It is well to compare the views, after the leaves have fallen, with those of midsummer, and observe where pleasing views may be opened by removing the trees, and note the unpleasant objects that may be shut out by judicious planting. Clean up all rubbish. Cover tender plants and put everything needing it into winter quarters by the end of the month.

Bulbs.—Take up Gladiolus, Tuberoses, Tiger-flowers, etc., before hard frosts. Dry them off and then put in paper in a dry place, where mice will not reach them. If the ground is open, put out spring flowering bulbs, Hyacinths, Tulips, etc,

Chrysanthemums remain as the last ornaments of the garden. Mark fine ones for propagating next year. Cut away the stems when done flowering.

Dahlias.—If the roots have not already been lifted, take them up on a fine warm day, putting the label with each—or note the color, if the name be not known—dry during the day in the sun, and set them in any cellar that will keep potatoes.

Frames and Pits.—Give the plants full air on mild days. Those set on the bottoms of the pits should have a layer of coal ashes under them. See that pits are mice proof—and poison any that intrude.

Lawns may have a dressing of good compost, which can be put on any time during the winter.

Leaves.—Collect all possible. We have mentioned on page 402 several uses for them. Another is, that they make excellent bedding for cows and other cattle, and by spring are rich manure.

Roses are to be protected as directed in September. If climbers can be taken down and covered with earth, they will flower all the finer.

Winter north of New York are not safe unless laid down and covered with earth.

Protect all herbaceous perennials, hardy or otherwise, with coarse manure, or a covering of leaves.

Green and Hot-Houses.

The plants being all in the house, the principal thing to look after is the temperature. In warm days, no fire will be needed, and again a sudden change will require care to keep the temperature from getting too low. In green houses the mercury may range from 35° to 45°, while in hot-houses 60° and 75° should be the minimum and maximum. Ventilate whenever external temperature allows, and water according to the requirements of the plants.

Bulbs, if not already potted, are to be put in for winter blooming. Keep in a dark and rather cool place until they have formed abundant roots.

Camellias should be kept cool, unless early flowers are wanted. Syringe freely; look out for insects.

Propagation of quick growing things may continue. *Salvias*, *Cupheas*, etc., will soon make strong flowering plants.

Greens.—Where bouquets are in demand, lay in a stock of *Lycopodiums*, *Ink-berry* and other greens.

Annals.—Where there are not many flowering plants, a good show may be made with annals. They may be sown now. *Mignonette* is always wanted for its perfume. *Rhodanthes*, *Nenophilas*, and *Lobelias* make fine house plants. Sweet *Alyssum* and *Candy-tufts* may be used if there is room.

Cold Grapery.—Remove the decaying berries from any clusters that may remain upon any vines in the house. In damp weather, close the house and keep it as dry inside as possible.

Apiary in November.—When a proper selection of stocks for keeping over has been made, there will be no tendency to rob. There is little to be done, unless important things have been neglected. The first cold weather makes bees very stupid—more so than that which follows, and if stocks have not been thoroughly examined, take advantage of the first freezing weather to do so. It is the part of humanity to take up small weak stocks now, rather than leave them to starve and freeze to death. Unfilled boxes may be stored for next season's use, and any dry combs should be saved for another year. Protect the hives from mice, by contracting the entrances. Hives containing stocks may be painted at this season without serious injury to the bees, and new hives or empty ones ought to be painted now, to get thoroughly dry before next season. Honey taken up this month will probably be very thick, and require gentle warming in order to strain it nicely.

Previous Numbers to New Subscribers.—We have on hand all the previous numbers of this journal back to January, 1856, and print more as needed, from our electrolyte and stereotype plates. Price of single numbers, 15 cents; of annual volumes, \$1.75 per year, postage included, or \$2.50 if sent bound. But any new subscriber received this autumn, who gets the two or three numbers, can have the back numbers of this year to complete his volume, at the rate of 10 cents each.

AMERICAN AGRICULTURIST.

ORANGE JEDD & CO., Publishers, 41 Park Row, N. Y. City.

ANNUAL SUBSCRIPTION TERMS (always in advance): \$1.50 each for less than four copies: Four to nine copies, \$1.25 each: Ten to nineteen copies, \$1.00 each: Twenty copies and upwards, \$1 each. Papers are addressed to each name.

Suggestive Questions To Everybody.

Preliminary Statements.—What the *Agriculturist* is, and has been so far this year, its readers know—how many beautiful and instructive large and small engravings (which alone cost about \$5,000!), how many articles on various topics, how many hints and suggestions, etc. Many would have the paper different—would omit this and insert that; but we have constantly acted up to our best judgment, taking into account the general interests of all concerned, and we think no one would willingly part with all he has read and be without the thoughts that have been suggested by what has been read.—Now, with constantly increasing experience, and facilities, we are able to promise even a far superior paper for next year. We expect to expend about \$10,000 in getting engravings that will be beautiful to look upon, that will cultivate taste, and be an ornament in the homes of our readers, and that will also furnish many practical hints in the various departments of Rural Industry. We expect to expend \$12,000 to \$15,000 more, in procuring and preparing a great amount and variety of useful and reliable information for the Farm, the Orchard, the Domestic Animals, the Garden, and the Household, including the Young People, and the Little Ones. We mean to have the best that unceasing industry, and any amount of money, can possibly secure. The result of this expense and effort—including the ten thousand dollars' worth of engravings, and the twelve to fifteen thousand dollars paid out for information, etc., including much information obtained by the \$1,350 offered for Prize articles on Prairie and Western Farming, on Cotton Culture, on Timber and Fencing for Prairies, and for Housekeeping Essays—can all be enjoyed by any person for the small amount of \$1.50 for the whole year, and less to clubs. The immense circulation divides all the expense among so many that we have to charge only a few cents to each subscriber above the cost of printing paper. Now then for

THE QUESTIONS.

QUESTION FIRST.—Is there one Post Office in all the United States or British America, where there are not 13 families or single persons, who would each find it a paying investment to expend \$1.50 for the *Agriculturist* for 1867, with all the advantages above set forth? (Any one subscribing this month gets the December paper also, without extra charge.)—Well, any person who will call on these 13 families, and talk about the paper and get their subscriptions and forward them, may call upon us for Five Dollars' worth of Garden or Flower Seeds, or any three back volumes of the *Agriculturist* in numbers, and the articles will be sent post paid. Two subscribers less will secure Morton's best No. 5 Gold Pen, a capital article, with pencil in Coin silver extension case. One subscriber more (14) will bring the No. 6, or large pen. We have written thousands of pages of letters and manuscripts with one of these pens and it is still in first-rate order. (See Premium list in another column, and full description given on pages 349 to 352, in October paper.)

N. B.—There are very few places where more than the cost of 13 subscriptions has not been lost by Hum-

bugs, which would have been saved had the *Agriculturist's* exposures been read there in season.

QUESTION SECOND.—Is there one Post-Office in the United States or British America, where there are not 15, 16, 17, 18 or 19 families, or persons, who would not be well repaid in the above advantages, for \$1.50 invested in the *Agriculturist* for a whole year (or 13 months now)? (It is less than 3 cents a week, or half a cent a day.)—Well, to any person who will shaply talk this matter over and collect 15 such subscribers, we will present Six Dollars' worth of beautiful Japan Lily Bulbs, or four back Volumes, or a splendid Book (Downing's). For 16 names three bound Volumes. For 17 names, one dozen beautiful best Silver-plated Teaspoons. For 18 names, the best Clothes-Wringer made; or a beautiful case of Mathematical Instruments; or four bound Volumes; or a large \$10 Architect Book; or a \$10 Library. One name more (only 19 in all) will bring 100 best Concord Grape Vines; or a \$12 Barometer; or Worcester's Great Dictionary; or 6 back Volumes unbound; or the *Aquarius*. The last column in the Table tells how many names at the lowest club price (\$1 a year,) will get any of the articles referred to.

QUESTION THIRD.—With the exception of a very few of the newest settlements, is there a Post-Office in the United States or British America, within the bounds of which there are not 20 to 30 families or single persons, who would not be well repaid, in the above advantages, for \$1.50 used in securing the *Agriculturist* for a year (or 13 months now)?—Well, just run the eye down the Premium Table, and examine the *selection* (!) different good articles that are offered free to anybody who will simply take the matter in hand, and collect and forward the subscriptions of these 20 to 30 persons who ought to have the paper, and would be glad to have it, if some one would tell them all about it.—Try it, and receive a present of Iona Grape Vines, or the best Washing Machine, or a splendid Pitcher, or the very best Table Spoons or Forks, or 7 to 10 back Volumes, or 5 to 6 bound Volumes, or a \$15 Library, etc., etc. Remember that every thing offered is the very best of its kind—nothing second-hand, but every thing is new and warranted first-rate.

QUESTION FOURTH.—Are there not at your Post-Office, or in your Town, or within your reach at different Post Offices, at least 30 to 60 families or single persons who would be well repaid for \$1.50 invested in the *Agriculturist* for 1867 (and an extra number to those subscribing this month)? Can you not, in evenings, on rainy days, on election days, etc., call upon these persons, tell them about the paper, and what they will get, and obtain from 30 to 60 names, with little or no expense to you?—Well, look in the Table of Premiums, and see the fifteen valuable articles offered, for 31 to 60 subscribers—the Sewing Machines, the Silver Ware, the Watch, Gun, Plow, Chest of Tools, Libraries, etc. Why! these premiums will pay somebody for getting up such clubs of subscribers in every settled town on the Continent. Read the Description of the articles given last month.

QUESTION FIFTH.—If in every settled town in the country, some enterprising person would hunt up half of the people who would be pleased and benefited by receiving the *Agriculturist* for a year, and who would take it, if it were properly and earnestly brought to their attention, would not there be found from 60 to 500 such people?—Well, please look at the table, and see the great number of good things offered for the larger clubs!

QUESTION SIXTH.—The paper is good; the people are to be found who want it; somebody can get the splendid premiums for finding them. May it not as well be you, as any one else?

MORE THAN 8000 Persons have obtained good premiums, in past years, and hundreds have already secured them this year. There is plenty of room for others to do the same thing. We are ready to send one or more premiums to each of the 25,000 Post-Offices in the United States and British America, if called for. Will you get one of them? It is easy to do so. Try it.

Table of Premiums and Terms, For Volume 26.

Open to all—No Competition.		Price per copy	at \$1.50
No.	Names of Premium Articles.		\$1.
1	Garden Seeds for a Family (40 kinds)	\$5 00	13
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3	Nursery Stock (Any kinds desired)	\$20 00	97
4	Group of Trees (13 of No. 1)	\$20 00	60
5	Concord Grape Vines (100 of No. 1)	\$12 00	19
6	Japan Lilies (12 Bulbs)	\$6 00	15
7	Sewing Machine (Wheeler & Wilson)	\$55 00	60
8	Sewing Machine (Grover & Barker)	\$35 00	60
9	Sewing Machine (Singer's Tailoring)	\$50 00	86
10	Sewing Machine (Florence)	\$63 00	76
11	Sewing Machine (Wheeler & Wilson)	\$55 00	60
12	Sewing Machine (Horse's)	\$90 00	67
13	Washing Machine (Duty's)	\$14 00	21
14	Washing Machine (Horse's)	\$20 00	18
15	Tea Set (Hart's best Silver Plated)	\$50 00	66
16	Cutlery and Fruit Basket (do. do.)	\$20 00	41
17	Ice or Water Pitcher (do. do.)	\$18 00	27
18	One Dozen Tea Spoons (do. do.)	\$7 50	17
19	One Dozen Table Spoons (do. do.)	\$15 00	22
20	One Dozen Dining Forks (do. do.)	\$15 00	22
21	Piano (Best Steinway & Son's octavo)	\$85 00	50
22	Melodion (Best octavo)	\$112 00	138
23	Melodion (Best octavo)	\$67 00	78
24	Ladies' Gold Watch (Beautiful)	\$100 00	130
25	Silver Watch (Valuable Time Keeper)	\$32 50	48
26	Double Barrel Gun (Very good)	\$30 00	46
27	Snow's Breach-loading Rifle (Hunting)	\$35 00	70
28	Foot Chest (First Quality of Tools)	\$14 50	60
29	Case of Mathematical Instruments	\$13 00	18
30	Case of Mathematical Instruments	\$15 00	22
31	Morton's Best No. 6 Gold Pen (Silver Case)	\$5 75	11
32	Morton's Best No. 6 Gold Pen (Silver Case)	\$4 50	11
33	Barometer (Woodruff's Mercury)	\$18 00	27
34	Barometer (Woodruff's Mercury)	\$12 00	19
35	Buckeye Mowing Machine, No. 2	\$125 00	130
36	Allen's Patent Cylinder Plow, etc.	\$20 50	31
37	The Aqueduct or Water Thrower	\$11 00	19
38	American Cyclopaedia (Appleton's)	\$20 00	96
39	Encyclopaedia (Great Illustrated Dictionary)	\$12 00	19
40	Any Back Volume Agriculturalist	\$2 50	20
41	Any Two Back Volumes	\$5 00	23
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Containing a great variety of Items, including many good Hints and Suggestions which we throw into smaller type and condensed form, for want of space elsewhere.

Mark All Subscriptions sent in, as New or Old.

For Market Report, See Page 415.

Please Send on the Renewals of Subscriptions.—It will greatly assist us in the great work of re-entering and arranging names on the new Mail Books for 1887, if those who find it convenient will begin, at an early day, to send in their renewals of subscriptions. Can not every present subscriber get at least three others to join him, and make up a club of four at \$5? The new subscribers have the extra inducement of the December number free, if the names are sent this month, as noted elsewhere.

British America Subscribers-Postage.—Subscribers in the Canadas, New Brunswick, Nova Scotia, etc., will save half the postage by sending 12 cents a year to have it paid in advance here. Most do so, but some omit it.

Our Advertising Column—To Readers and Advertisers—Explanation, etc.—As this Journal goes to several thousand new readers each week, and among these are some who offer advertisements, we give a few explanations: While it is impossible to guarantee all the advertisements, we try to come as near it as practicable. Our aim is to advertise nothing we would not have read by a brother or most esteemed friend. Patent medicines and all other secret things are rejected. Also all advertisements deceptive in form and substance. Parties offering advertisements, who are unknown to the editors personally or by general good repute, are expected to furnish evidence that they have both the intention and ability to do what they promise to do in their advertisements. We want none to advertise in these columns to whom we would not ourselves send orders, or cash in advance, if we happened to want what they advertise and at the price they ask. By living up to these rules, we make the advertising columns exceedingly valuable both to our readers and to the advertisers. Our readers will find the advertisements worth looking all through, to learn what is for sale, and by whom. We repeat a former request, that those who order from our advertisers or write to them for circulars, catalogues, etc., will state where they saw the advertisements. It is useful and gratifying to business men to know through what channel they reach the largest class of enterprising persons.

Correspondents Please Observe:—Use any initials or signature desired, but send your full name and address with the article. We frequently wish to communicate with a writer, and are unable to do so for want of the name. We never publish a name when some other signature is chosen. Always name State and County. There are several Washington's, Monroe's, etc., and an answer often depends upon our knowing the climate, etc.—Do not date from "Spring Grove"—"The Dell"—or any other name by which your own place is known to yourself and immediate friends. We cannot be supposed to know it, a thousand miles away.—Do not ask too many questions at one time, especially on different subjects.—Do not write about farm, garden and household matters all on one sheet. A mixed letter often goes to the department indicated by the first query, and there stops.—We answer questions on their merits, and first, such as will interest the greatest number of readers.

Big Cabbages.—As usual at this season, Mr. R. Criswell, "the Long Island Cabbage Farmer," ornaments our table with some of his fine, hard Flat Dutch cabbages. They weigh 22 to 22½ pounds (trimmed.) He shipped over one hundred thousand last season to Southern ports.

To Post-Masters, and Subscribers—Mailing Papers.—EXPLANATIONS WHY PAPERS GO TO SOME BEFORE OTHERS.—As fast as subscriptions or renewals are received, they are numbered and recorded in the Entry Books daily. (In busy seasons when 1,000 to 5,000 names come in a day, an entry Book for each day in the week is used.) The Posting Clerks sort out the names from the Day Books and arrange them in the Mail Books for the different States and Territories, putting all

those at the same Post-Office together, and indexing the Post-Offices alphabetically. (To find any person's name we must know his State and Post-Office.)—Our mail clerks begin a month in advance to write wrappers for all names then posted from the Daily Entry Books. These are first sent off, all those to the same Post-Office in one or more parcels, at the same hour. This is called the "regular mail." Afterwards all names arriving within a month are written from the Entry Books and mailed in the order of reception. Sometimes half a dozen different parcels go to the same P. O., but a week or more after the regular mail is sent to old subscribers. These new names are then posted into the Mail Books, and the next month they go in the "regular mail." It will thus be understood why new names and renewals get their first copies later, and not with the first regular mail. This system is necessary to ensure entire accuracy.

Plants Named.—F. Berlene. Some Begonia, probably *B. fuchsoides*, but it lacks flowers. Samuel Johns, Mo. *Verbena Aubletia* (early). Partridge Pea, *Cassia Chamærista* (yellow), and *Sabbatia angularis* (rose). M. R. Allen, Me. A variety of the common Evening Primrose, *Oenothera biennis*, and Water Plantain, *Alisma Plantago*. Mrs. A. D. Gray, Pa. Spotted Dead-nettle, *Lamium maculatum*, an old garden plant. P. H. Adams, Texas. *Erythraea Bryckii*, one of the Centaureas. D. N. Begun, O. *Euphorbia marginata*, often grown in gardens. Mrs. E. A. Robinson, R. I. A green-house species of Milk-weed, *Asclepias Curassavica*, sometimes grown as a bedding plant. P. F. Ferris, No. 1. *Gerardia quercifolia*, No. 2. Great Purple Orchis, *Platanthera peramona*. J. B. Metz, Pa. The common Live-for-ever, *Sedum Telephium*. It has great tenacity of life, and must be grubbed up completely. Mrs. J. Prescott, N. J. Joseph's Coat, *Amaranthus tricolor*, a very old "foliage plant." J. Fitzgerald, Pa. *Gerardia pedicularis*.—A lot of rubbish and incomplete specimens remain undetermined.—In regard to naming plants, we are very glad to help those who cannot get at the name in any other way, and who will send us good specimens—never more than three at a time, and then properly marked.—We don't propose to spend time in guessing at single leaves and ends of growing shoots. Nor can we fill our space with giving botanical names of garden plants. The person who, without name or date, enclosed us some dozen or more garden and green-house things, with the common names, and asking for the botanical names, should have some good book on the subject.

"Donation Parties" are much in vogue, and often very pleasant affairs. Our business letters describe several such parties a little out of the usual line. In these cases, the members of a congregation, headed by two or three individuals, have quietly raised a premium club of subscribers, and secured a set of the Cyclopaedia for their Pastor, or a Sewing Machine or Melodeon for his family. Premiums 15 to 20, 25, 31, 39, etc., in this year's list, will afford pleasant additions. The matter is easily accomplished, and a double object is attained; the paper is scattered and read more widely, while the useful premiums are secured without expenses. Where this has not been done or thought of by the people, the pastors themselves have secured the much valued Cyclopaedia, etc., by a little effort in making up a club.

About Insects.—They eat our potatoes, and bore our trees, destroy our crops, sting our fruit—yea, even sting us and bite us, and suck our blood; they bless us too in a thousand ways. The study of insects and their habits is most useful and interesting, and every body is interested to read about them. We can recommend without qualification the *Practical Entomologist*, published at Philadelphia, and refer our readers to the Publishers' advertisement. It is practical and not so "scientific" as not to be entirely "popular," and easily understood by every body.

"Diamond Cut Diamond."—Some time ago we inserted full paid advertisements of the Herald and World, for the "reasons" stated last month, (page 345,) and two or three cried out "stop my *Agriculturist*." For the same "reasons" we inserted a large advertisement of the Tribune in September, and then came "a stop my paper," and complaints from others because we did not have in the same paper advertisements of the Herald and World, which chanced just then to be pulling together politically. (We did not have their advertisements, for the very good reasons that they did not happen to bring them in and pay for them.) As the friends of the World complained of us that time, we will call the World on the stand as a witness in our defense, and quote from an editorial in that paper (the World) of Sept. 29: ".... We can do the public morals a service without being suspected of a sinister motive. That

service is to enjoin upon every republican to buy the Tribune and read that, and to refuse to buy the Herald at any price.... The Tribune holds its principles in sincerity, and advocates them because it really believes the country will be the better for adopting them. The Herald advocates them because it thinks their advocacy will pay; because it thinks they are likely to succeed...."—N. B.: This is not a "political item." We just want to show our protesting friends that we have pretty high authority for admitting an advertisement of the Tribune, as some seem to think we need to ask permission for advertising anything of any kind.

The Lake Shore Grape and Wine-Growers' Convention was held at Cleveland, O., on the 10th, 11th, and 12th, of last month. The attendance was large, the discussions animated, and the display of fruit and wines very fine. The interest of the meeting was enhanced by the presence of veteran pomologists, Hon. Marshall P. Wilder, Prof. J. P. Kirtland, Dr. Waidner, George Graham, etc. We gathered many notes at the meeting, and shall hereafter allude to some of the prominent features.

Our Young Folks, published by Messrs. Ticknor & Fields, Boston, has, from its commencement taken the first rank as a magazine for Boys and Girls. The instructive yet lively articles it contains monthly, attract the attention of many "children of a larger growth," as well as always delighting the juveniles. The plans for the coming year promise increased excellence, and we commend it to all who would furnish their children with good matter which they will read.

Hay and Cotton Presses.—These have been very greatly multiplied of late years, and increased in power so that many of the most bulky substances sent to market, Hay, Cotton, Straw, Rags, etc., are now pressed into small bulk and can be as easily handled, or loaded on cars or vessels as flour or similar merchandise. We saw recently a press called the Champlion, advertised elsewhere in this paper, which exhibits an astonishing combination of mechanical powers. A screw operates upon the periferies of two wheels, which move a "toggle-joint" lever, which does the pressing, with great power and rapidly.

N. Y. Time Tables.—Benedict Brothers, 171 Broadway, issue monthly a very convenient Guide, giving the full time tables, etc., of all the numerous Railroad Trains, and the Steamboats centering in this city, including a condensed map of the city and its streets up to 59th street, and of parts of Brooklyn and Williamsburg. Price 20 cents.

"A Sow" (writes 'X'), owned by John Ambler, of Cambridge, O., recently produced a litter of 23 pigs!!

Bommer's Method for Making Manure.—Some 20 years ago letters patent were issued to Geo. Bommer, for a method of making manure of great value out of the common rubbish and litter of the farm, at a small expense for a few articles, or their equivalents, which indeed are usually at hand. This patent, now expired, was somewhat extensively sold at \$10, for a farm right, we believe. The account of the process was given minutely in an 8vo. pamphlet of 90 pages. These pamphlets we now offer on our Book-list. The information is just as valuable as if the patent right were still in force, and the process we know by experience and observation is a most excellent one to increase both the quantity and value of the manure.

Shell Marl as a Fertilizer.—A Caution.—The investigations which the peat swamps have undergone of late, have developed the fact that many of them are underlaid with shell marl. This is chiefly carbonate of lime, and is a valuable manure where it can be had in large quantities. The value may be \$1 to \$3 per cart load. The quality of marls varies greatly, and the quantity applied, in like manner. Thus 12 to 20 tons of some kinds and on some soils—and 60 to 100 tons being applied in other cases. The idea of making shell marl an article of commerce like the phosphatic guano, or even the green-sand marl, to say nothing of more valuable manures, is simply absurd!

The Evening Post appears again in a new dress, new type, and printed on better paper. Though in its 66th year, it has all the freshness and vigor of any of its more youthful competitors. Mr. Bryant's writings have always been its principal charm, and it is gratifying to know that his pen is still active as ever. See Advert.

Manure and Corn.—We have already many interesting responses to our questions (page 278,) about the prices of the two articles, but would be glad of more. As our readers return their names and subscriptions for 1867, will they not put in a slip for the *Editors*, saying:—"I can buy common barnyard manure for \$— per cord, (or per cubic yard,) and corn is worth here — cents per bushel."

Tall Corn.—Isaac Beardorf, of Jay Co., Ind., writes: "I raised the past season a stalk of corn 16 feet high, with 2 good ears, the upper one being 21 feet above the ground. There were plenty of stalks nearly as high. Who can beat it?"

Ashes.—L. T. Fribert, of Dodge Co., Wis., writes: "I have a city garden, keep no domestic animals from which to get manure, burn a great deal of wood in my house, and have plenty of ashes. I learn from the *American Agriculturist*, that ashes are a valuable manure, that I may use them on my compost heap to mix with muck, etc., (but unfortunately I have, like the most of the city folks, no compost heap,) that I can scarcely give my garden ground too much leached ashes, and that unleached ashes are much more valuable as a fertilizer than leached ones. But the question is—'What shall I do with my unleached ashes—having no compost heap?'"—Answer: After spading or plowing the garden, scatter them over the surface evenly and rake or harrow them in. Scatter them around the fruit trees, grape vines, etc., on the surface; they need not be spaded or forked in, for they will naturally work down. Give the grass a dressing, sowing them by hand, or very evenly with a shovel, raking the grass over to break the lumps afterwards. If you have any left, make a leach tub and leach enough ley to make soft soap for the year. Don't mix ashes with animal manure.

Coal Ashes.—"D. St. G. F.," Bedford Co., Pa., asks: "Will coal ashes be of any benefit to clay soil? The soil here is a very heavy clay, and we use no fuel but coal. I thought the ashes would have the effect of loosening the soil without injuring it."—This is just the effect they have, and just such soils as yours are most benefited. They ought to be screened and the clean ashes applied—the clinkers and stones will do no good.

Pigs Born with Teeth.—W. H. Rodney, of Sussex Co., Del., wrote sometime since, in answer to a question in the *Agriculturist*, that "some litters of pigs in this section in the fore-part of this year all died off, and continued to do so until it was discovered that when they were born they had long sharp teeth, which prevented their sucking. They cut their tongues very badly and soon died. But the teeth being broken off even with the gums with a pair of nippers, they could then suck, and in all cases I have heard of, the pigs did well. The teeth are not very solid and are easily broken. This trouble about pigs has not been known long in this section, but it has become very common now for persons to notice young pigs when they are first born, and if they have teeth, to break them out, or they will soon die.

Death in the Chicken Yard.—T. Forth, of Preble Co., Ohio, has very bad luck with his chickens. They are well, grow pale about the head, their flesh blue, and they die after a few hours' or a day's sickness. It seems to us they are poisoned. Where rats are poisoned, they run out into the yards and vomit; the chickens eat this and die.

Hops in Michigan.—A correspondent informs us of the very great increase of hop culture in some sections of Michigan. This year the crop is light, but prices high. The louse is beginning to be troublesome, and should be met next spring with the best remedies yet suggested. We hope our readers who have tried any remedies, will report their success or failure.

Constitution for a Farmer's Club.—The undersigned hereby associate themselves as the Farmer's Club of ——. Their objects in so doing are to promote their own welfare and intelligence, as farmers and citizens, and their enjoyment socially, with their families. The members are those who regard themselves as such and who have attended meetings within 3 months. The officers shall be a President chosen at each regular meeting, a Treasurer and Secretary, chosen annually, whose duties shall be those usual to such officers, and who shall constitute the executive committee. The club shall be governed by established Parliamentary usages, enforced as strictly or otherwise, as the chairman may deem expedient. The regular meetings shall be held on the 2d Thursday evening of each month. The executive committee shall have power to call meetings, lay taxes, and have charge of all the property of the club. No taxes exceeding 25 cts. per month shall be laid and collected. This constitution may be amended only with

the consent of two-thirds of the members present at a meeting, and two-thirds of all the members.

Fruit Preserving Houses.—Several Correspondents. We believe that the universal testimony is in favor of these. The house is a large refrigerator, with ice at the top to keep the temperature low, and within the house is placed a quantity of chloride of calcium to absorb the moisture. The fruit is thus kept cool and dry, and the house being tight, the fruit is soon enveloped in an atmosphere of carbonic acid from its own exhalations. These are the general features, and are a combination of well known and long used expedients. We have said but little about this, as we assume that holders of patents will do their own advertising. This one holds his "rights" at a price so outrageously high that, while we admit the utility of the thing, we regret that the estimate put upon its value is so great, as to keep it out of the hands of all but capitalists.

Salve for Chapped Hands, etc.—"The following is a well tested, excellent remedy for chapped hands, and sores of this nature. Put together equal weights of fresh, unsalted butter, mutton tallow, beeswax, and stoned raisins; simmer until the raisins are done to a crisp, but not burned. Strain and pour into cups to cool. Rub the hands thoroughly with it, and though they will smart at first, they will soon feel comfortably and heal quickly."—*Cayuga County Girl.*

Wringing Machine Rollers—Repairing.—Answers to several inquiries. The rubber rollers very seldom give way in well made machines, especially if there are cogs to relieve the strain upon the under roller. They can be easily repaired, however, by merely sending the defective shaft to the manufactory, or to any leading agency of the respective companies. The cost is about \$3 to \$4 per pair (less for one) at the factory, to which add freight or expressage.

Grease for Cow-hide Boots.—Heat well together, in any iron vessel, 1 pint linseed oil, 2 ounces tallow, 1 ounce beeswax, and 3 tablespoonfuls of lampblack. Apply with a brush. I have used this 15 years with entire satisfaction.—*A. M. Knapp, Poultney, Vt.*

The Last Ant, abili, excessit, evasit, erupit—atque sine controversia vicinis.*"—R., of Watertown, N. Y., sends an amusing account, too long to print, of sundry contests with ants, closing with the above quotation. The gist of it is, that a little kerosene oil poured or injected into or about their habitations, invariably causes them to quit for parts unknown, instantaneously. This applies to all kinds of ants, black, red, wood gnawers, etc. He thinks with little trouble in applying this, our country may soon be as free of ants as Ireland is of toads.

Taking Care of Brooms.—Have a screw with an eye or ring on its end; this can be screwed into the end of the handle of each successive new broom. It is handier to hang up by than a string, though the latter answers if always used. It is bad for a broom to leave it standing upon the brush. If not hung up, always set it away with the stick end down.—*"O. K."*

Butter-making Hints—Wheel Grease.—*Fruit Stains.*—Mix all the cream thoroughly together 10 or 15 hours before churning, so that it will be of equal sourness and all "come" at the same time.... To extract wheel grease, rub on the yolk of an egg, let it dry, and wash out in clean water, without soap. Repeat two or three times if necessary.... To extract fruit stains, dip the fabric in boiling water before wetting with suds.—*Extracts from a pleasant Springfield, O., letter—no name.*

More Home-made Ink Recipes.—(Sent with good specimens.) Put 2 ounces each of gum arabic, extract of logwood, powdered nutgalls, and copperas, in a stone jug with a quart of hot water; set the jug in a kettle of water upon the stove, for 12 hours. Shake it up occasionally, and it will be fit for use in about a month. Frost does not injure it. I have used this for 18 years.—*Thomas Bragden, Omro, Wis.*... Dissolve in 1 gallon of rain water, 10½ ounces powdered nutgalls, 3¼ ounces gum arabic, and 3 ounces copperas. Shake frequently, and in 2 or 3 weeks it will become good. Keep closely corked. It will endure for centuries.—*M. K., Foxboro, Mass.*

The Secret of Washing Easy.—"U. S. Y.," writes, that a servant refused to leave for another place, simply because she would not go where there was not a wringing machine. [This is one of the "machines" which even the servants like generally, as much opposed as they are to machines of all kinds.] "U. S. Y." thinks the secret of the success of the wringer, and the great argument in favor of washing machines, is the fact that

with them boiling water can be used without burning the hands, and this removes filth and oily materials left in garments by the skin—far better than merely warm water.—There is undoubtedly much in this. Another secret is the soaking of the garments over night. Water with a little soap in it, is a great dissolver, but it needs time to act. Half the labor is saved by soaking the garments several hours before the washing begins.

Lard and Resin, for Preserving Metals from Rust, for Chapped Hands, for Sore Teats, etc.—We have often commended a mixture of lard and resin, ("rosin," "rosun,") as excellent for preserving all metal surfaces from rust. It may be applied and rubbed off nearly clean, and yet enough be left to shut out the oxygen of the air. It therefore answers for delicate instruments, and for steel household implements not in constant use, as well as for plows and other large implements, since it is very cheap.—A subscriber in Birmingham, Erie Co., Ohio, says he finds 1 part resin to 3 parts fresh lard the best proportion. It needs merely to be warmed and stirred together, and can then be kept any length of time. He finds it excellent for greasing boots to keep out water, for chapped hands, old sores, etc., for sore teats on cows, for scab or scurvy on hogs, etc.

Keeping and Settling Coffee.—The following appears valuable: "For 1 lb. coffee, take one egg and beat it well. When the coffee is nicely browned and cool enough not to rook the egg, pour the egg over it, stirring it until every kernel is coated as with a varnish, and let it stand a few minutes in a warm place until it dries. This will prevent the escape of all aroma, is not affected by moisture, and the egg helps settle the coffee when it is ground and steeped."—*Farmer's Daughter, Hastings, Mich.*

Hotch Potch.—Chop very fine, 3 parts green tomatoes, and 1 part onions, with more or less of garden pepper pods and salt; let it stand 12 hours, then put in ajar and cover with vinegar. Excellent with meat in winter.—*Mrs. Sam'l P. May, Plantersville, Texas.*

Tomato Crout.—Pick the last green tomatoes before frost, and chop very fine with any desired quantity of green peppers, allspice, cloves, and cinnamon. Pack in jars and set in a cool place until it sours, when it may be cooked like cabbage crout, or eaten raw.—*"A Friend to the Agriculturist," Prairie City, Mo.*

To Hull Corn.—Boil in weak ley until the hulls begin to come off; then rinse well two or three times, in plenty of water; next add clear water and boil until done through.—*Marion Chaffin, North Star, Mich.*

Soda Crackers.—Rub well together, 14 cups flour, 1 cup lard, 4 teaspoonfuls cream of tartar, and 2 teaspoonfuls of soda. Add 3 cups of water, and work the dough very thoroughly. Roll, cut, and bake quickly.—*Mary Mendenhall, Roseville, Penn.*

Chatanqua County Corn Bread.—The following is very good for general use, and I think would have taken the prize at your Corn Bread Exhibition: Take 4 quarts corn meal, 1 quart flour, 1 cup molasses, 1 teaspoonful soda, 1 tablespoonful salt, 1 pint milk emptyings; mix quickly with milk or water, and bake slowly 4 hours. It is improved by remaining in the oven over night.—*W. H. S. Grant, Poland, N. Y.*

About Unbolted Flour.—I admit that unbolted flour will make the most healthful bread, but bran and flour separated will keep sweet longer than if mixed. We have tried the following with satisfaction. Bolt and keep separate as usual. For bread, mix the pure flour and let it rise two-thirds of the necessary time; then wet the bran, mix it with the dough, and let it all rise the rest of the time; then bake. You thus obtain very good, sweet, sound bread.—*M. Nieder, Ozaukee Co., Wis.*

Wood's Parlor Gymnasium.—Mr. John Wood, who has long maintained the excellent Gymnasium, cor. of 5th Avenue and 25th street, supplies a valuable little apparatus for developing the muscles and promoting the healthful activity of the organs of the body. It is readily and quickly put up and taken down in any room in the house, and if faithfully used by sedentary persons, and all who do not have sufficient physical labor to give the best vigor, it will prove of great value. We have one in our home study, and when engaged long in writing, we spring up occasionally and use the handles, cords, pullies, and elastics a few minutes, with decided advantage, regaining a flow of blood in the veins, and an increased elasticity of spirits. By using one, two, or three of the elastic cords, it is adapted to children, females, or strong men. It packs in a box 4x6x8 inches. Price \$10.

"Introduction of the Verbena."

In August we gave an account of the introduction of the verbena, now so common in our gardens. Several have written from the "far West," claiming that "the verbena" grows wild there, and seem to think that South America gets credit for a plant that belongs to their region. We well know that several verbenas grow wild in different parts of this country, and that one of those of the West and Southwest is tolerably showy, and has been cultivated. This is *Verbena Aubletia*, which has been recently sent out as *Verbena montana*. It is a rather weedy plant, but is hardy and keeps long in bloom. The article alluded to referred solely to the bedding plant, so common as to have monopolized the generic name *Verbena*.

Strawberries in Iowa.—"T."

In referring to our note in last month's basket, says: "Allow me to modify your advice somewhat. Plant in spring on the highest and driest spot you can select. If not perfectly dry, dig a small trench around the bed in autumn, throwing the dirt outside, and if you don't want some big prairies in it, don't try to protect with anything in winter, not even the slightest mulch. I will say, even to the *Agriculturist*, if there is a better berry for the Northwest than Albany Seedling, take it altogether, I have yet to see it."

Cutting Strawberry Runners.—"W."

Ishester, Ill., asks, if there is any implement for cutting strawberry runners. We believe that one or two contrivances for this purpose have been invented, but we never knew them to be used. Our large growers nip the runners by hand, or if too old, they cut them with a knife.

The Agriculturist Strawberry.—

We did not intend to say anything more about this fruit at present, but here are two opinions that we like to put side by side. In the words of the showman, who was asked which was the tiger and which the hyena, "You's paid your money and you takes your choice."—From *Hovey's Magazine* for July, 1866. "*Agriculturist Strawberry*. * * * It is simply a good sized, rough looking, and fair-flavored berry—all and even quite as much as was expected of it, and probably of no real value, compared with *La Constante* and *Hovey's Seedling*. The vines have not wintered well generally, and it is exceedingly variable according to cultivation."

In the *Horticulturist* for August, 1866, Mr. J. M. Merrick, Jr., Walpole, Mass., (Walpole being 18 miles away from Boston.) writes: "*Agriculturist*. In size and vigor of plant, size of berry, and general excellence, this famous kind stands at the head of the list and surpasses all the other kinds—some thirty-two in number—which I now have on trial. * * * In brief, I may say that in my opinion, the best berry, taking all things into account, is the *Agriculturist*."

Fine Asters.—Only those who recollect the China Aster of twenty-five years ago can appreciate the improvement that has been made in this flower both in form and color. They are annuals, and every one can raise them. A splendid show of these flowers was made at our office by Cuno Kretschmar Bros. & Co., of Brooklyn, N. Y., and a very fine bouquet of them was received from P. Hannah, of Newburgh, N. Y.

Grape Queries.—"Yankee," Fairfield, Iowa. Draining is "essential," unless there is a very open subsoil that gives a natural drainage. If you cannot get tiles, make stone or rubble drains, or use boards. None of our American grapes have yet been profitably converted into raisins.

The Giant Wax Bean.—Under the above name we have received a sample of beans from Mr. Henry A. Drier, Seedsman, Philadelphia. The pods are 6 to 9 inches long, thick and fleshy, of a pale yellow color, and a waxy appearance. The seeds are red. The peculiarity about this variety is, that its pods, even when full grown, are perfectly tender, and may be used as snap beans. We have tried them both separately and in succotash, and consider them really delicious. The variety is a pole or running bean, its origin is unknown; but wherever it came from we welcome it as a valuable addition in our list of varieties.

Propagating Plants.—"A. M.," Macon City, Mo., asks: "Whether a small room with the south all glass will not be a good substitute for a hot-bed in starting plants, making the bed so as to receive the light and heat of the sun through the glass, and when cold, heat the room with a stove."—This is one of similar queries that come from those who think that any glass structure will do for a propagating house. A room like the one described would probably answer as a greenhouse for wintering some plants, but it would be a very poor place for starting plants from seeds or cuttings. Structures for propagating need to have the soil some

degrees warmer than the air (bottom heat), and to have the glass as near the bells as possible.

Burying Hollyhocks.—Helen A. Burrough, Floyd Co., Iowa, failing to winter hollyhocks by covering, keeping in the cellar, etc., at last tried burying them a foot deep in the soil of the garden. They kept well and grew finely when set out in the spring.

Fine Gladiolus Flowers.—We thought we had seen the *Gladiolus* as fine as it could be, but some specimens from Mr. Geo. Such, South Amboy, N. J., convinced us that there was a "touch beyond." Mr. S. is an enthusiastic cultivator, and imports all the new and rare European varieties of *Gladiolus*.

Country Roads—Cross-ways for Water.

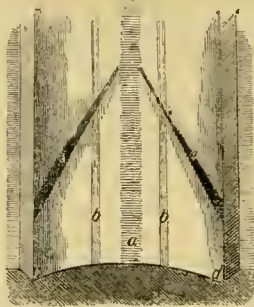


Fig. 1.

The cuts show sections and birdseye views of country roads: *a* is the horse track in the middle of the road; *b, b*, the wheel tracks; *c, d*, the gutters; *e, e*, the wash-ways off from or across the road. If it is desired to turn the wash off on both sides, very slight depressions (*e, e*, fig. 1) commencing in the wheel track on each side, and widening and deepening to the gutters, with a slope towards the bottom of the hill, are all that is necessary and will not cause a jolt to a wagon that will break any thing or be uncomfortable. If the wash is designed to cross the road, let it do so in a long diagonal (*e, e*, fig. 2). It does not take a very high cross-way to turn water where it has a free course, but if it is dammed up and turned at right angles, it will take of course a high bank or cross-way to turn it. It is not always practicable to keep the middle of the road the highest, but it can be easily accomplished in many more cases than it is done.

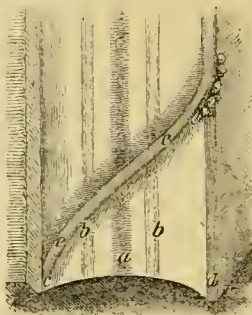


Fig. 2.

Unruly Salsify.—"Carolus," Danville, Ky., complains that his Salsify, the seed of which came from a reliable dealer, instead of making a biennial root, ran to seed the first year and was worthless. Moreover, the plants from this seed did the same thing. It is not unusual to see a number of plants in a field of biennial plants, such as carrots, parsnips, etc., flower the first year, but we never knew a whole crop to do so. We can only account for this occurrence by supposing that the growth of the Salsify was checked by a drouth, and the plant as effectually put to rest as it would be by cold, and when a "growing time" came again, the plant started to flower just as it would in spring.

How to Mend a Mill Stone.—We have already cautioned against the practice of filling the cavities of mill stones with lead. Spencer Haines, of Burlington Co., N. J., writes that he uses melted sulphur with sand poured into the cavities while the mixture is hot, and finds it to answer every purpose, and to last.

Internal Revenue.—Every one pays taxes in one way or another now-a-days, and is interested in knowing what the law requires. There have been several publications of the revenue laws, but the best we have seen is one compiled by Horace Dresser, published by D. Appleton & Co. It contains the original law of 1864, with all the subsequent amendments conveniently arranged for reference with marginal notes, and a complete analytical index. Price 50 cents.

Good-looking Husbands. should be careful where they get their photographs taken. A lady writes us, that while on a visit from home, a female friend showed her, very confidentially, a picture of the said friend's promised husband. Judge of her surprise to find the photograph a very accurate likeness of her own husband, whom she supposed to be entirely unknown to her friend. Her first thoughts were of unfaithfulness, and all that, but the matter was finally explained thus:

The husband in question, when in the city, had his photographs taken in quantity for his friends, but rejected half a dozen or so which he thought not correct. The lady friend above referred to, seeing an advertisement of a "fortune teller" to "send any one a likeness of her future husband for 50 cents," had invested that sum with the swindling sorceress, and received the picture in return. The fortune teller supplied her customers with rejected miscellaneous photographs, gathered at a cheap rate at the photographic establishments, selecting of course the best looking ones, so as to please the fancy of her dupes. Ergo, good-looking husbands (and wives too) should be careful where they get their likenesses taken, and carry away all the copies made; otherwise they may find jealousy and trouble created by the fortune tellers.

Annealing Nails.—As a very easy and effectual method of annealing nails, a subscriber recommends heating them red hot and plunging in cold water. Better to heat and then cool slowly in ashes or sand.

Brine on Sour-Crout.—Q. R. Comstock asks why the brine on sour crout rises and falls, and states that sometimes the brine is several inches above the crout, and *vice versa*. We do not suppose that the brine changes at all, but that the apparent rise and fall is due to the crout, which, being in a state of fermentation, gives off gas, the bubbles of which being entangled in the crout, make the mass light enough to rise. The activity of the fermentation is affected by warmth.

Toes of Shoes.—Wm. H. Maxwell, Johnston, O., writes: "A line in the *Agriculturist* says: 'Copper tips protect the toes of children's shoes.' I know a better way. Make them what is called 'Scotch bottoms,' that is, a sole projecting one eighth of an inch, or about that, beyond the usual rule and always sewed. That makes a bottom on which to walk, an elastic easy sole, and protects the toes."

Something Entirely Unwarranted.

—The following is cut from a report of the proceedings of the American Institute Farmer's Club for Sept. 4th:

"**Names for Grasses.**—A. M. Burns, Manhattan, Wiley County, Texas, wants to send a variety of grasses for names. We commend him and others desiring such information to send specimens to Prof. Thurber, No. 41 Park Row, New York; or J. Stanton Gould, Hudson, New Jersey, and always be careful to enclose \$5."

We can only say that no one connected with this office was ever known to make any charge for information, and we have no doubt that Mr. Gould will feel quite as much surprised at the implication as does the gentleman whose name is associated with his. We believe the reporter of the proceedings meant kindly—but when we are advertised to do jobs, we prefer to be consulted. Send on your grass, and pay your postage, but keep your \$5.

Surface Indications of Water are often difficult to detect, and frequently wanting altogether, even where water is close at hand. Sufficient perseverance will generally be rewarded, and so the willow, peach, or hazel-wand indications, if followed, will usually come to water sooner or later. Water obtained by digging wells is of two kinds; that which flows into the wells from the adjacent ground in which it is held as in a sponge or a basin, being supplied from the surface, and hence called "surface water;" and that which flows in under-ground channels at indefinite depths. If a well is sunk near, or cuts one of these channels or subterranean brooks, the supply of water is usually more permanent than surface water. Surface indications are uncertain, unless the inclination of the strata of rocks, or of gravel, clay, sand, etc., is obvious, and the water flows out on side-hills where these strata crop out, or unless the spongy or dishing character of the soil is obvious or proven. We would rely on no general indications of water, but would dig our wells where we wanted them to stand, unless so doing would be in opposition to geological indications, or to facts established by other attempts to find water in the immediate neighborhood. Certainly we would never follow the Water Wizard and his switch, in many cases fallacious.

Let us see Your Figures.—A Winnebago Co., Ill., correspondent asks this triple question, viz.: "Which is the most economical way to fatten 20 steers—1st, to feed them corn on the ear (the usual way); 2d, to take the corn to mill and give one eighth (they take one sixth,) for grinding; or, 3d, to buy a mill for \$75 and grind your own corn?"

Paint—Coal Tar.—"Is coal tar good paint for the outside of a small house?" asks S. L. B.—Yes, if you like a black house, which no sane man can. We know of no cheaper and better paint than good boiled linseed oil, with best white-lead or zinc-white, tinted of an agreeable stone-color or earth-color.

Poetry not Desired.—Occasionally a contributor sends us poetical contributions. Some of these are of sufficient merit to publish, had we room for such articles. As it is, we are obliged to decline them, and as this is a general rule, no one will feel slighted.

Lost Parentage, or "Credit."—Though sometimes gratifying to one's vanity, it is often vexatious to see his literary offspring wandering around the world in a state of orphanage—or even worse, as the legitimate offspring of others in whose company they are found. Owing to the unpardonable habit certain editors have, of appropriating others' brains, with scissors and paste, we every month see hundreds of items and longer articles, of course our best, printed and re-printed, either with no credit, or with an entirely wrong credit. One paper is more quoted than almost any other, because, though providing very readable columns, it adopts as its own, the gems of our periodical literature.—The *Agriculturist*, because almost entirely original, suffers quite as much as any other journal, in respect to the plagiarism complained of. Take a single example out of thousands, as an illustration: The *Central Christian Advocate*, of June 20, contains a beautiful piece entitled "A Free Concert," or the Singing of Birds, and places before it, "From the Religious Telescope." The fact is, that article was written for the *Agriculturist*, June 1857, (Vol. XVI, p. 236). Where the Telescope got it, or what paper first deprived it of its parentage, we do not know.

Root Cutters.—Roots are cut up for stock in many ways. We have used with satisfaction a sharp spade, cutting perpendicularly, or slid back and forth against one end of a strong box. The other end of the box is taken out, and this end raised up a few feet. Another good way is to mash the roots with a heavy mallet. Root cutters are sold at various prices—\$22 to \$65. Allen's (\$65), made according to an English pattern, cutting them either in slices or narrow strips—is strong and good.

"Cattle Food."—We have refused advertisements from many parties offering various prepared "foods" for cattle, horses, etc. Some of these are, undoubtedly, useful to animals in a weak or low condition, as tonics. After being made acquainted with its composition we have now admitted an advertisement of one of them which is highly commended by parties of our acquaintance who have used it, and the composition of which is not objectionable. The only exception we would take to it is, the recommendation to feed it to animals *after* they are brought into good condition. Men stick to tonics from habit; we would not let animals do so.

"Prepared Photograph Paper," which requires no instruments, but is all ready to take excellent pictures, is advertised in Western city papers. Is it not a humbug? Thus writes Nellie Smith, Walworth Co., Wis., and we answer, Yes, and No. Yes, in so far as it conveys the impression that pictures can be taken upon it. No, when it is considered as a amusing and rather expensive toy. The paper is of two kinds, one has a picture already taken upon it, but invisible; the other is impregnated with a chemical solution. When this last paper is wetted and laid upon the first, the picture already there is brought out.

Answers to Queries.—The *Agriculturist* has a serious fault in not affording its editors 100 pages per number to answer all the questions proposed to them. Many letters receive personal answers where such are not requested; others are answered in the "Basket" whose writers desired personal responses; for many others, answers are written, put in type, and crowded along from one month to another, until they finally get a place, or until it is too late for them to appear at all, and so our readers think their letters are over-looked. We answer all that we can and as soon as we can. Still, many are crowded over every month, and we see no help for it. Send in the queries if you can be patient, and we will continue to do the best we can.

Even-Blast Fan Mill.—"A. R." If you make a fan on Mr. Leach's plan, you of course infringe his patent. The honest way is to communicate with him.

"Charles Reade" — "Prurient Prudes."—What singular notions some foreigners have of the American people and their tastes. A marked case of this misconception has just occurred. Charles Reade, a writer of some note, who dates from "No. 5 Albert Terrace, Hyde Park, London," has been supplying a story to an American Journal. A paper or two took occasion to criticise the story rather sharply on the score of morality, etc.—Whereupon Mr. Reade sends over a letter, headed "Prurient Prudes," which he expects, almost demands, that "all editors of American journals

who have any justice, fair play, or common humanity to spare," will print. After seeing Mr. Reade's bombastic, ill-natured, self-conceited letter, in which he shows out his real nature, we have no desire to ever read another book of his, and we advise every American to give a severe go by to any thing written by Charles Reade of Hyde Park. The *Evening Post* well calls his letter, "a bucket of dirty water." No man who could write and sign such a letter is fitted to furnish proper or acceptable mental diet for enlightened Americans.

"How it Works."—A gentleman in sending \$20 for twenty copies of the *Agriculturist* to be distributed in his neighborhood, writes ".... Aside from the good I may do to others by this expenditure, I expect to receive it back, ten, if not a 'hundredfold.' Twenty of my neighbors reading the paper for a year will be led, insensibly, to brush up their farios, and improve the general look of things; they will plant more shade and fruit trees from simply having their attention called to the subject; they will talk about and put in practice improved modes of cultivation—in short, the result will eventually be to so change the tone and look of things in the neighborhood, that my whole farm will sell for at least \$5 or \$10 an acre more than it would otherwise. That's the way it works...."—No doubt of it. No family can read the *Agriculturist* regularly without insensibly acquiring an improved taste, from its engravings alone, while its hints and suggestions have set tens of thousands of people to thinking, inquiring, comparing views, and making improvements, no matter whether they have followed out its direct teachings or not. The results have been far more valuable than the small cost. Then, in the present year, this journal has saved to honest people millions of dollars by its exposure of humbugs alone.—We hope every reader will see that some one is making up a premium club at his Post-Office. The premiums are too good not to have at least one of them go to every town, and the wide circulation of the *Agriculturist* is of too much importance to be omitted. Those who will be least likely to take it without being urged to do so, are just the ones who need it most.

Sundry Humbugs.—We report a gratifying decrease in the letters respecting attempts at swindling. Instead of the bushel or two that came when we commenced a new and vigorous onslaught and exposure, we have this month but 56 such letters, and these refer to only 19 swindlers, mainly parties already shown up by us. We intend to follow up and expose these swindlers until their operations shall entirely cease to be remunerative, if they are not wholly made so now. The wide circulation of the *Agriculturist*, amounting to an average of half a dozen regular copies to every Post-Office in the United States and British America, makes it a formidable stumbling block in the way of those whose deceptive schemes are exposed in its columns. Numerous threats and attempts at prosecution will only stimulate its efforts. No one doing a legitimate business, in a legitimate way, need fear injury. If in exposing more than a hundred and fifty operators, as we have done this year, we should by any chance do the remotest injustice to a single person, (which we do not believe has been done,) our columns are always gladly opened for correction. We only aim to guard our readers and the community against the wily schemes of those who, by plausible circulars, advertisements, etc., deceive the trusting and ignorant. The honest people are least suspicious of wrong in others, and are therefore the most likely to be imposed upon. The country, from Maine to Oregon, has been privately canvassed, and the names and address of almost every person is recorded in some of the numerous swindling establishments. These play into each other's hands, by exchanging lists of names, and thus it happens that the same person receives "private" and "confidential" circulars from many concerns. Our readers will please promptly send us every new circular that comes to hand. Never mind the 20 or 25 days, or other limited time allowed to secure some wonderful prize for a very small investment. If anybody wants one of the \$60 watches offered for \$5 (after paying \$5 for the ticket), we can supply one, which we purchased at one of the most plausible and close mouthed ticket operators, for the sake of investigation. It cost us an \$X, but after trying it two months, and calling in the aid of a good watch-maker, the beautiful thing don't "go" except as we carry it.... *Harris Brothers* were duly exposed last month. Many generous persons, wishing to aid the soldiers in every possible way, have unwittingly sent their \$5 each to them, and received and forwarded the "subscription certificates" to us, which have of course been promptly returned. We have not learned whether or not the "Rural American" accepts the bribe of "an immense increase in circulation," and winks at the operations of *Harris Brothers*. Nothing is said about it in that paper. Has any one obtained that, or any other journal, for one of *Harris Brothers* "certificates." It was a gross imposi-

tion upon us for them to attempt to make us even appear to countenance their "Lottery," for their scheme at best is no better than any other lottery, while they attempt to take advantage of people's kind feelings towards disabled soldiers. We are glad to learn that in sundry places where the scheme "took" at first, the people decided to wait until the October *Agriculturist* came to hand.... *J. D. Miller* still carries on his "Depository of Merchants' Manufacturers' swindle," but of course not among the readers of the *Agriculturist*. The latest letter of his sending out which we have received, he dated Sept. 29th.Nine parcels of tickets before us, of recent issue, show that *Mackey & Co.* still operate under the old name. See September *Agriculturist*, page 311, for exposure of this concern and others.... *W. T. Orton*, for Wood, Ellis & Co., dating at Progress, N. J., continues his swindling schemes, making offers calculated to lead green "agents" to help him sell bogus tickets.... *Lottery* dealers have been rather quiet since the "Massachusetts Decision" about U. S. Licenses, but we find before us the circulars of *Murray, Eddy & Co.*, Box 4304, N. Y. City, which will of course be taken from them. See about Lotteries page 172, March *Agriculturist*.... *Dr. Ogden* should go into partnership with the (Rev.) *Edward Wilson*. See page 211, June *Agriculturist*. They both operate in the same way, if not the same party, and are to be avoided. *Edgar Tremain*, also "L. C. W." also *Mrs. M. Merritt* are all of the same class. Don't touch their "benevolent" medicines.... "The Great American Paint Company," so called, charges a dollar to tell you to make a mixture mainly of lime with some sugar and salt in it, and adding whitening or other coloring materials. A Big company that! We paid a dollar for the prescription, which being of no value we have temporarily mislaid, or we would print it here.None but very foolish people will spend their money for the "Magic Wand," "Perfume of Love," and a lot of things sold with them..... *Madam Hentzelman*, a professed "soldier's widow," is smart enough to take care of herself (himself?). She (he?) has tried to get even editors to help her sell the people without charge.... The Nassau Street Gift Associations are all frauds.... Notes on several other humbugs must go over to next month, for want of room.

Look Out for the Meteors.—Scientific men predict a large meteoric shower about Nov. 13—perhaps on the 12th or 14th, and probably a considerable number on each of the three evenings. The show will be free to all who are wide awake—especially those who are out on those evenings making up their premium clubs of subscribers for the *Agriculturist*. December number free to all new subscribers received in November.

Addresses at Fairs—A Novelty.—At the Queens County Show this year a plan was adopted, which we think may often be pursued with profit, especially when it is impossible to secure the presence of some distinguished public man who will, by his reputation, draw a large crowd of paying visitors, that would not otherwise come out. Instead of one address, there was half a dozen short talks, by as many practical men from different localities, each one of whom discussed his favorite subject or mode of practice. In this way variety is secured, and more of general interest learned, than if one man does all the talking.

"Useful Everywhere."—"Western Farmer" writes: "I was glad to notice your remarks in October number about the general utility of the *Agriculturist*. We have a local agricultural paper that has harped much upon our 'sustaining our own home journal' which would be all very well if it said less about it, and did not say so much against all others. Why, it has 23 subscribers at our P. O., every one of whom was first lead to read anything about his business by the sorghum seed and other premiums given by the *Agriculturist*, and this is largely the case in the West.—Last year I tried to raise a premium club for you here, urging people that they would find it pay to take both that and their home paper. They said 'no, we want no distant papers—they are not adapted to our culture.' I loaned my *Agriculturist* to one of them regularly, and asked him to compare that with the 'home paper.' To-day he joined the club I send you, saying 'that three-fourths of all in the home paper was copied from the *Agriculturist* directly or indirectly, and the latter paper contained many other things he wanted to see.'—I have found dozens of hints in the *Agriculturist* that have each been useful beyond the cost of the paper. You have some matters, like manures, adapted to particular localities, but how could the paper be of general value everywhere, if it did not refer to these things peculiar to limited areas, for there are such peculiarities in all parts of the country. This attention both to topics of general interest, and to local matters as well, is in my opinion what gives the great general value to the *Agriculturist*...."

Maternal Instinct.—Mr. A. C. Coleman, of Preble Co., Ohio, sends us the following curious and interesting statement: "A short time ago the children of Mr. Hapner brought from the barn four little forsaken chicks, and put them in a box for protection. A pullet not yet half grown entered the box, and remained brooding over them, until it was removed to the hen-house and the chicks covered up for the night. The next day the pullet again claimed her little charge, and since then has remained with them constantly, scratching the ground, feeding them and clucking in a most pompous manner, although the clucking, like the pullet, is on a small scale. The pullet in fact is so small, that it can scarcely cover its four little chickens when brooding them."—Instances of the adoption of the young of other animals, by males as well as females, and often not of the same species, are not very rare. We know no similar case to the one reported, but pullets that have never laid, and young cocks even, may be made to sit, hatch and take care of chickens.

A Mammoth Squash, weighing 130 lbs., is on exhibition at our office, contributed by Mr. Jas. Beveridge, of Flushing, L. I. Like most big things, the seed was reported to have come from California. Mr. B. thinks its size due to a special fertilizer used.

Permanent Fair Grounds. The **Queens County Fair** was a great success this year, as it could not fail of being when such men as Samuel Taber, President, and John Harold, the long time Secretary, determined to make it so. After years of talk and discussion, a majority vote was secured in favor of a "permanent location," which did not agree with the wishes of some parts of the County, and the feasibility of which is still an open question in the minds of a large number of the leading agriculturists throughout the county. The town of Hempstead gave a perpetual lease, for exhibition purposes, of 40 acres of land, near the Mineola Station, on the L. I. Railroad. It was well enclosed and suitable buildings erected in a brief time, including a fine central structure in the form of a Greek cross, covering 8000 square feet. The arrangement of the grounds and the buildings are a model well worthy of being consulted by all who contemplate permanent locations. We have visited some State Fairs which scarcely exceeded that of Queens County this year, and so long as John Harold and his present coadjutors manage the Society, the experiment of a permanent location will be successful there. Whether under ordinary circumstances and management, the good grounds and buildings always ready for use, counterbalance the advantages of competition among different towns, and of working up an interest, often in remote localities where it is most needed, may still be discussed pro and con.

The Fairs—Cattle Shows—Fruit Shows.—We are obliged to refrain from noticing in our crowded columns, except in a general way, the various exhibitions of this season, many of which we had the pleasure of attending. The interest and attendance upon some held during the last week in September, were unfavorably affected by a north-east storm, but prevailing good weather ensured large attendance. The Pennsylvania State Fair, at Easton, was famous for the wonderfully fine show of hogs made—the Chester Co. breed greatly predominating. We think a few such shows will indicate their claim to being a distinct breed. The Illinois Fair was a success, especially in the classes of neat cattle, draught horses, and implements. The Missouri State Fair is reported as very creditable in all departments, and a great pecuniary success. The Canada West exhibition, so far as we can learn, exceeded as a cattle show any held in the States. We have numerous reports of successful county and town fairs also, and congratulate the managers on their successful efforts—but cannot record particulars.

Calves—Rearing without Milk.—A subscriber asks for the experience of our readers in regard to raising calves without milk? We know it may be done, but without great and constant care many calves will droop and die. The practical questions really are: How may calves taken from the cow at birth be best raised? How soon may all milk be safely withheld? What is the best substitute for milk? What course of feeding or medicine, or treatment (which includes both,) is best to check the scours or their opposite in young calves brought up by the pail?—Our columns are open to valuable hints and experience.

Reynold's Stove Hook (or "Dexter," as he calls it) is an ingenious arrangement of two pieces of iron like a pair of shears, combining a stove-cover lifter, kettle lifting hook, pie-tin lifter, a small hammer head, and sundry other uses about a cook stove—on the whole a convenient addition to the kitchen furniture.

The Moon.—"A great many about here," says a Rootstown subscriber (State not given,) "stick to the notion that shingles should be put on, garden 'truck' planted, pork killed, sheep sheared, etc., etc., just at such a time of the moon. What do you think?"—We think: Do your work when you are ready, with the ground prepared, and the weather favorable, and let the moon take care of her affairs; she won't trouble you. Let those wait and watch the moon who have nothing else to do.

Tobacco.—We are often inquired of by Farmers and others, as to some method of preparing for use the tobacco which they raise. The sailors' way is simple and good. After the curing and drying process is complete, select the inner and best outer leaves of the tobacco; sprinkle with pretty sweet molasses and water, and lay them together, until they become uniformly damp. Then twist them into a roll, say 12 or 15 inches long, and 3 inches through. Bind them together tightly with twine. The twine should be wound on the tobacco in 2 or 3 layers, like thread on a spool, and drawn as tightly as its strength will allow. After remaining for 2 or 3 weeks it will be fit to use, although the longer it is kept the better it becomes, if not allowed to mould, which may be prevented by wiping occasionally with a rag wet in molasses, or liquorice and water. This will be found better for smoking and chewing than the ordinary tobacco to be had in country stores.

Curious Growth of a Radish.—A radish from the garden of Mr. Halsey Minton, near Dover, N. J., presents such a curious form that we have had an engraving made of it. It is not unusual to see the long radish split up into several prongs and twist about in a curious manner; but this appears to be a round radish, bent on repeating itself in the manner shown in the illustration. A friend, who ought to be ashamed of it, suggests that it ought to be called a "fourhorse radish," certainly it has one characteristic in common with a tandem team. What circumstances induce these freaks of nature, no one knows. Sometimes the influence would seem to affect the seed before germination, and at others afterward. The investigation of them would be difficult, but not less interesting—often instructive.



Irrigation.—"W. W. O.," Suffolk Co., N. Y., writes: "I can turn the water of a brook upon my ground by laying a pipe 1½ miles, with a fall of about ten feet. My plan is, to lead it through the center of my land, and place a faucet every ten rods, to which I can attach a hose and use the water as I wish. The grand question is, will it pay? If so, what kind of pipe do I want, of what size, and what will it cost?"—*Answer.*—There is much land in many parts of the country, where it would pay well to irrigate thus. We can hardly decide in a particular case without a full examination. The best pipe would be galvanized iron, about 2 inches in diameter (cost 75c. per foot). Thin sheet iron pipe lined with cement and laid in and covered with the same, would do also, at less cost, though not so durable.

Pennyroyal Ground.—"B. B.," Washington Co., Pa., asks how to reclaim land that is "addicted" to Dewberry vines and Pennyroyal. The soil appears rich, but it is a hard matter to get grass started. Try plowing this fall, harrowing in 100 to 150 bushels of lime, planting corn next spring, manuring in the hill with a shovelful of good compost or yard manure, and hoe well, by horse and by hand. If a good dressing of manure is spread and plowed in for the corn, with flat culture, the briars may possibly be so far destroyed that grass can be sown among the corn in August, and by rolling the ground flat in October, when the crop is off, a good sward may be obtained within the year.

Farcy in Horses.—"J. W. H.," Franklin Co., Mo., and others. Farcy and Glanders are the same disease exhibiting itself in different forms. It is incurable, and very dangerous. The only safe way is to kill the sufferers, and take great care that the disease is not communicated to men. In the early stages the disease is not conspicuously evident, and unscrupulous persons often sell glandered horses. This ought to be a State Prison offense. The symptoms and treatment are minutely described in our last volume, page 309, (October, 1865).

A Good Team marks a farmer as a general rule; horses or oxen, it is all the same.—"Progress" says: "If you see a farmer with a poor team, you may be sure there is a screw loose somewhere."

13 Months in a Year!

All new subscribers to the *Agriculturist* for 1867, whose names are received during November, will receive **free of charge** the December number, which will be a very valuable one. This will give **13 months** for a year's price. The offer applies to all new subscribers, singly, in clubs, in premium lists, etc. Extra time allowed for the arrival of names from the Pacific Coast and other distant points, if started soon after this notice is received. All new names must be marked **new**, in order to receive the extra number.

1867.

The American Agriculturist Annuals.

We propose soon to issue two Annuals for the year 1867, the one *Agricultural*, the other *Horticultural*. They will each contain about 120 or more pages, 12 mo., and will be in a sense, a continuation of the *Rural Annual*, published by us, and formerly by Mr. Harris of the Geesee Farmer. The names "Rural Annual," "Rural Register," "Annual Register," etc., are so constantly confounded that we reluctantly drop the old name. These Annuals will, we hope, be worthy of and will doubtless gain a very large circulation. A limited space will be allowed for first class advertisements in either or both, which must be sent in before December 1st.

The *American Agricultural Annual* will contain a brief review of the past year—notice of important events, inventions, publications, etc., affecting the agricultural interests of the country, importations of stock, introduction of new crops, etc.; contributed articles of an interesting and practical character, fully illustrated; practical hints in regard to work, and machinery, besides convenient tables, and a full almanac.

The *American Horticultural Annual* is the first of what we hope to make a permanent series. As it is late in the season, we cannot hope to make it entirely what it is ultimately intended to be—a record of the years progress in horticulture, giving positive land marks, describing what has been done in the past year, and indicating what should be done in the coming one, though the first number will be valuable to all. It will contain contributions from well known horticulturists, and embody much useful, practical information. No annual of the kind has before been published in this country.

The \$1,250 Prizes: Prairie and Western Farming—Cotton Culture—Timber and Fencing for Prairies.

As announced in October *Agriculturist*, page 344, we offer the following Prizes: For the Best Treatise or Essay on *Prairie and Western Farming*, \$350; For the Second do., \$100; For the Third do., \$50.... For the Best Treatise or Essay on *Cotton Culture*, \$400; For the Second do., \$100.... For the Best Treatise or Essay on *Timber and Fencing for Prairies*, \$150; For Second do., \$75; For Third do., \$25.—The manuscript on Cotton Culture to be ready Jan. 1st; on Timber and Fencing Feb. 1st, and on Prairie Farming March 1st. For full particulars, see October *Agriculturist* and printed slip furnished at this Office to those proposing to write.

\$100 Housekeeping Prize.

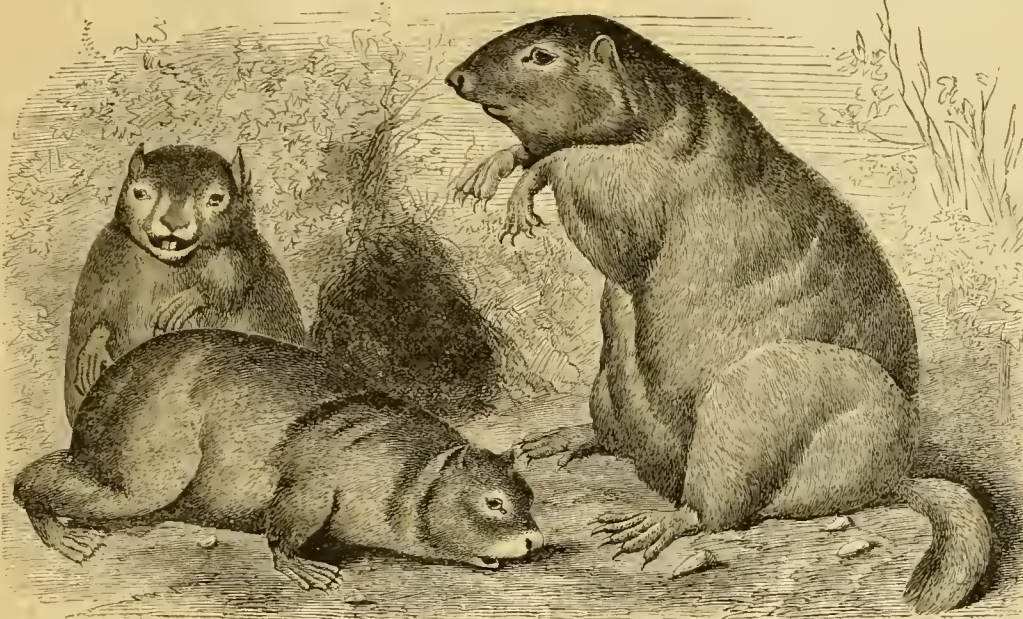
For the Best Essay on Housekeeping, to make 20 to 25 columns in the *Agriculturist*, the Publishers will pay a prize of \$100 cash. Something after the manner of "Walks and Talks on the Farm" may perhaps come the nearest to what is wanted, though we do not limit the offer to any particular form or style. What we want, is, to get an article to be continued through the year 1867, of 1½ to 2½ columns in a paper, which shall be interesting and instructive to Housekeepers—one which shall bring in the work and cares of daily life. That Essay will be the most valuable which shall in the least space convey the greatest number of practical hints and suggestions in a readable, easy style. The Essays to be received on or before Dec. 1st, or at least enough of each to exhibit its general style and ability. The first chapter is desired for the January number. After the selection is made, the writer will have opportunity to amend and improve the chapters subsequent to the first, as the time is limited for their first presentation.

The Woodchuck.—(*Arctomys monax*).

We present our readers this month engravings of two more of our familiar native quadrupeds. The Woodchuck has a very wide geographical range North and South, and westward probably as far as the Mississippi. The marmot of Europe, and the prairie dog of the western plains, are animals of the same genus (*Arctomys*), and of similar habits. The woodchuck is 16 to 18 inches long, with a solid robust body, broad head, short, rounded ears, bright prominent black eyes, numerous whiskers, and short legs with long claws. The fur is short and woolly, and sprinkled full of coarse hairs. It varies much in color, being gray, inclining to reddish and brown, ashy-gray upon the nose and throat, usually grayest upon the shoulders, and reddish-brown on the legs and pate. Woodchucks live in pairs in burrows, which are generally made in light sandy or alluvial land, the animals preferring the neighborhood of cultivated fields and fruit-orchards, where the damage a single family will do in one summer, is considerable. When undisturbed, the fields, even of a small farm, will often become in a few years filled with the burrows and tenanted by hundreds of woodchucks. They excavate chambers below the reach of frost, and store up clover heads, apples, and other food not liable to decay, for the winter's use. They are rather difficult to catch, for, being chiefly nocturnal, it is quite inconvenient to watch the traps. Steel traps are generally used, and set in the entrances to their holes and covered with earth, or baited with sweet apples. If caught by the head or body, they are secure; but if caught by one leg, they will gnaw it off, and lookout for traps thereafter. We doubt not there are thousands of three-legged woodchucks alive and well about the country. The burrows are so long and deep, usually being in a bank, that it is hard to dig them out, and there are always, in our experience, two entrances. The young are peculiar

sage-looking little fellows, and well represented in the engraving. Taken young, they are easily domesticated, and become very tame, affectionate, and exhibit considerable intelligence.

The flesh of the Woodchuck, though coarse, is palatable, and if taken in the autumn, fat and juicy. The fur has little value, as it lacks beauty, but makes very comfortable mittens, tippets, etc.

WOODCHUCK—(*Arctomys monax*.)**The Musquash.**—(*Fiber zibethicus*).

The Musquash, or Muskrat as it is often called, is another peculiarly American animal, which is so well known as scarcely to require description. It is also very widely distributed over the United States, frequenting alike land bordering upon salt and fresh water, choosing swamps

of the musquash is "compressed vertically," that is, it is flat, the edges being above and below. The beaver, which the musquash greatly resembles in its habits, and which is naturally close akin to it, has a broad horizontally flat tail. Like the beaver, the musquash builds dome-like houses in the swamps, and plasters them well with mud on the inside, so that they turn

the rain, while outside they look simply like a heap of sticks and reeds. The fur is valuable, and is chiefly exported. The skins, which, a few years since sold for 18 to 25 cents each, now bring \$1. They are taken for the fur in fall and in early spring. Freshets in the streams, or extraordinarily high tides, drive these animals from their holes, and then they are easily shot, clubbed, or speared. They eat the roots of aquatic plants, Calamus, Pond Lilies,

etc., and are very fond of fresh-water shell-fish, especially of the *Unio*. So far as their food goes, they do the farmers little damage; but wherever embankments are made to shut out the tides, or canals are dug to convey streams to mills or for irrigation, or dams are erected, there the muskrats do great damage by burrowing through the embankments just below the sur-

face of the water, and causing leaks. We gave on page 253, (July), descriptions of traps for taking muskrats, which are said to be very effective, but most persons rely upon the fowling piece, and a war of extermination in times of high water. In the winter time they are rarely seen upon land, except close about their breathing holes in the ice; but their food and the entrance to their burrows and houses being both below water, they get along very well, except in times of severe

MUSQUASH—(*Fiber zibethicus*.)

with dry sandy banks, or earth embankments, in which it burrows. It is 10 to 12 inches long, with a thick set body and arching back; head short, but rat-like, and the gnawing or front teeth very large, long, and powerful. The hind feet are very long, and a short web is found only between the two longest toes, yet the animals are rapid and strong swimmers. The tail

cold and little snow, when the entrances to their holes freeze up, and in times of flood, as already mentioned.—The name Muskrat is obviously derived from the strong odor of musk, which comes from glands near the tail. Musquash is said to be the Indian name, and is preferable, for the animal is not a rat in any proper sense, but, so to speak, a beaver on a small scale.

Skunks Destroy Honey Bees.

Mr. M. S. Snow, Forestville, Chautauqua Co., N. Y., reports to the *American Agriculturist* an original observation in regard to the fact stated in the heading of this article. He writes:

"It is a well-known fact that Skunks dig out the nests of the Bumble bee, taking the bees, but leaving the honey undisturbed. There is hardly a farmer, or farmer's son, but has met with their work while going about the pastures and meadows. But it will surprise people to know that they will attack bees in their hives and eat them readily, as though they were harmless as flies. This occurs when the hives are near the ground, or within their reach. They carry on the work dextrously. If no bees are outside, and the pickets are withdrawn, they will actually stick their noses into the hives and snuff, to bring them to a sense of their duty; and when they come out, they take them right and left. At other times they scratch upon the hive to accomplish the desired effect. Those who keep hives near the earth, and find the alighting boards considerably soiled, and the grass or earth scratched over, may be sure that skunks have been at the bees. This is a matter of my own original observation."

A Talk on Sheep Breeding.

Mutton and wool being the products of the Domestic Sheep, the one, or the other, or both equally, are the especial aim of the sheep keeper. Improvements in the carcasses of sheep of particular breeds have been attempted, and resulted in distinguished success. Efforts to cause flocks of sheep to yield finer wool and heavier fleeces, have also been eminently happy in their results. It seems as if sheep breeders had, at least until lately, regarded good mutton with a well shaped carcass as incompatible, or undesirable, in the fine-wool producing breeds. That mutton is a less than secondary consideration with fine-wool growers is natural enough, for while mutton sheep live but a few years ordinarily, and are best kept in rather small flocks and conveniently near to market, fine-wool sheep are allowed to live, and are fattened and killed, often, only when their teeth give out. They may be kept too in large flocks at a great distance from market, their product of wool being easily packed and safely transported. Hence hardiness, and vigor of constitution, are of much more importance than fitness of the carcass for the table. No small portion of the mutton raiser's profits arises from the wool, hence to him the latter is of more importance than is mutton to the wool raiser. The kinds of wool too, which are yielded by the mutton breeds of sheep, meet an active and constant demand in the market.

The attention of farmers has within a few years past been called especially to improvements in the Spanish Merino sheep. The sheep are larger, yield heavier fleeces (and more wool), and being thoroughly acclimated, are probably harder than when first introduced. Spanish sheep were taken not only to America, but into France and Saxony, and from Saxony into this country, Silesia and Russia, and in each of these countries were subject to peculiar treatment in accordance with the views of the sheep breeders in whose hands they were; hence we have several quite distinct breeds of Merino sheep, all departing more or less from the original type of the best Spanish flocks, which varied also among themselves.

In all the great advances that have been made

in the breeding of cattle, sheep, or other animals, it has been the object of breeders to direct the vital strength of the animal to the development of the most valuable portions, and to do away with the useless or less valuable portions,—to "breed in" good points, and to "breed out" bad ones. In the short-horn cattle, for instance, big heads and horns, coarse fleshy tails and legs, and skinny necks, are bred out; and fine bony heads, thin tails, small bones, sinewy legs and thin necks, free from dewlaps, are bred in. A similar course was followed by Bakewell, in improving the long-wool sheep.

It becomes fine-wool sheep breeders to inquire candidly whether the system hitherto practiced by them is founded upon as correct principles. We have been painfully impressed with the fact that many breeders of American Merinos, at least in their conversation about their sheep, and in indicating their good points, talk more about the color and abundance of the yolk, and the number and position of the wrinkles, than about the quantity, strength, and fineness of their wool, their well-shaped bodies and hardy constitutions.

There is a tendency in the Merinos to wrinkle—that is for the skins to be very loose and lie in folds or wrinkles over the body. Now as no more wool grows on a wrinkle sheep than on a smooth one, and as wrinkles make a fleece harder to shear, and as the wool is not so uniform and good on the wrinkles and between them as upon smooth parts of the body, we say wrinkles are useless, a nuisance, a deformity, and should be bred out if possible. Yet some of these breeders seem to pride themselves in wrinkles, and show them off as if they were one of the greatest merits their sheep possessed.

Moreover there is also a natural tendency in all sheep, and especially in fine-wool sheep, to secrete an oily soap in the wool, which is called grease or yolk. This prevents the felting of the wool, and its getting dry and breaking; it prevents also the moth attacking the fleece, and may have other uses, but a maximum good effect is attained with a comparatively small portion of yolk. It seems to us that the greatest quantity really needed, cannot be more than twice the weight of the wool. Yet many will wring locks of fleece, and exhibit with great glee the drops of oil which exude from them, and actually claim it as a great merit. The production of 10, 15, or 20 pounds of this greasy soap, (which is not uncommon), containing as it does about 33 per cent of potash, is a serious tax upon the vital powers of the sheep; it is moreover useless, a tax upon the land, and an unnecessary weight to transport to market. Hence we condemn excessively greasy fleeces. The weight of the fleece is no criterion of the actual weight of wool it contains. Manufacturers know this, and avoid the purchase of this greasy wool, or pay for it only very safe prices.

The mutton sheep of the improved breeds are hornless, both ewes and rams. The rams of fine wool breeds all carry heavy horns as a general rule. These are ornamental, it is true, and a wrinkled head with its ponderous circumvolut-ed and gnarly horns, is very picturesque upon a flock leader; but horns are useless, a great tax upon the vital powers to produce, dangerous weapons besides. Why not then breed out the horns? It may be easily done. Years ago an American sheep fancier ably advocated smooth, no-horned Merinos, and actually bred them. And we must record our hope and anticipation that before long we shall have a breed of hardy, good-bodied, short-legged, smooth, fine-

wool sheep, peculiarly American in common-sense fitness for their uses.

We were very much gratified to observe that the judges at the late New York State Fair at Saratoga awarded a first prize to a Vermont Merino ram nearly hornless—having a single horn not bigger than one's finger. A Vermont breeder of fame, not less than Mr. Hammond's, shook his head and said: "That never could have happened in Addison County."—We hope it may some day.

Mr. Hammond and the other sheep breeders of Vermont, who have made such improvements upon the original Spanish sheep, have certainly gained a much better form for their sheep. They are less leggy, their bodies are more compact and deeper, they are heavier fleeced, and there is more wool in the fleece. The wool besides grows all over the sheep, covering the legs and the bare spots which used to be on the bellies, and, though not so fine, it is of greater length. We give a fine portrait of one of these sheep, winner of one of the first prizes at the New England and Vermont Fair, on our first page. It exhibits well the striking peculiarities of the breed. It is claimed by the breeders, who appear to set a high value on wrinkles and grease, that these are marks of vigor of constitution and ability to transmit their good qualities to the progeny. This we are not inclined to dispute, but would like to have the proof.

Chicken Ailments.

GAPES.—Our discussion of this subject in former numbers has been tolerably full, but especially bearing upon a cure—which is effected by removing by a feather-tip the worms in the windpipes of the chickens, which are the cause. The prevention of the ailment is thus treated of in a communication to the *American Agriculturist* by N. B. Worthington, Esq., Editor of the *American Farmer*, of Baltimore, which journal, though suspended during the war, is now a welcome monthly visitor.

"I have a word to say to the 'wide, wide world' of Chickendom, and ask your permission to say it through the *Agriculturist*. Here, in Maryland, I have insisted over and again, that chickens *must not have* 'Gapes,' and our well bred chickens will no more gape in your presence, than the well bred boys and girls will yawn before folks. Elsewhere, I find that chickens are gaping still, and scarcely an agricultural Journal, but a remedy is asked or given. A favorite one is to throttle the poor innocent, and, with a feather or hair, twist a bunch of worms out of its throat. This may cure, when it does not kill, but it reminds me too much of an attempt I made in my young days to unchoke an ox, that had an apple in his throat. My bungling attempts killed him. I let the next one alone, and he managed the apple himself. The chickens may not be so successful, but having tried this and many other remedies, I would, if my chickens had gapes, which they have not, diligently *let them alone*. So much for remedies.

"For preventives, the New England Farmer says: 'This disease is caused by colds and sore throat, which the chickens get by wandering in the wet grass,' and the preventive is to keep them dry. A Bucks Co. correspondent of the *Germantown Telegraph*, replies: 'How is it that they never get that complaint when fed on wheat screenings, and allowed to run when and where they please?' This writer adds: 'Years ago, we fed exclusively on Indian meal, and invariably had the 'gapes' to contend with.'

Avoid Indian meal, is his preventive. I cite these as specimens of how Doctors differ on this point; and let me say in passing to this last, that I feed with Indian meal always, and almost exclusively, and never have "gapes."

Now, to pass to the point: Did any one of your readers ever see a chicken with "gapes" on an absolutely new settlement—a place just built upon? We saw once a whole brood have it on such place, which, at ten days old, was brought from an old place infested with the disease. Every one of the brood took it, after coming to their new home, or rather, brought it with them undeveloped. Not one took it that was hatched after the removal. I was impressed with the fact, because, with great love for poultry as a boy, I had 'seen my fondest hopes decay' at the old place, without remedy.

"Taking the hint, I have never allowed my chickens to remain for many successive years on the same 'run.' I plow up thoroughly the old yards, and spade the floors of houses; or, what is better, remove the yards to any ground on which poultry has not been confined before. It is *their own accumulated filth*, not that of other animals, which poisons them.

"Of course, chickens must not be kept on ground retentive of moisture, nor required to drink filthy water; nor allowed, when quite young, to run through wet grass; but with ordinarily decent management, I believe 'clean ground,' an absolute preventive of gapes."

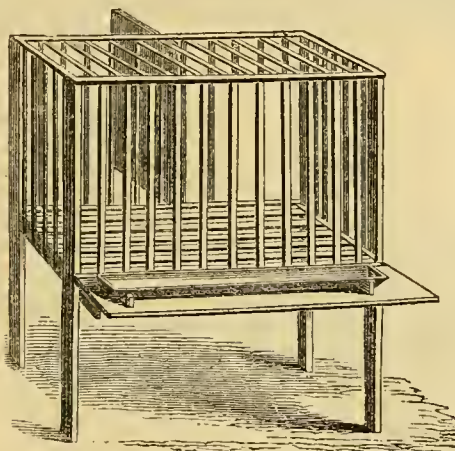
Fattening Fowls.

Many hundreds of thousands of fowls to be killed and eaten this autumn, are now running about growing fast and picking up seeds and such insects as have survived the frosts. These are very good to eat, taken just as they are, if properly cooked; but the majority of purchasers think fat fowls much better than lean; therefore, as soon as chickens have nearly or quite their full growth, the best policy is to fatten them, for not only will the weight be much increased, but if properly marketed, they will bring much higher prices. We very rarely see thoroughly fattened poultry in our markets; certainly it is not because people will not buy them, for there are people in our large cities who will buy high priced things simply because high prices are the only indication they have of superiority. Fat poultry keeps, and bears carriage and exposure to air, much better than lean, which alone adds several cents per lb. to its value.

Some breeds of fowls are naturally disinclined to wander and take much exercise—these will fatten tolerably if allowed their liberty; but most will only get into a condition of good flesh, however much they be fed. Yet if these birds are confined in close quarters, so that they will have very little space to move about in, and are fed well, and have water, gravel, and some green food regularly, they will take on flesh and fat with astonishing rapidity. Fowls are profitably confined in fattening cages, set up a foot or two above the ground or floor, so that they shall have fresh air. Mr. Saunders, in his work on poultry, (see our book list,) advises the use of a cage for 24 fowls, 2 feet high, 3 feet long, 23 inches wide, standing 2 feet from the ground. The entire coop is made of bars $1\frac{1}{2}$ inches wide, round or flat. The bars on the bottom should be $1\frac{1}{2}$ inches apart, the rest 3 inches apart. Several in the front and sides should be movable for convenience in catching the fowls. There should be one or two plain board partitions to separate

quarrelsome fowls, or make the coops smaller for a proportionally smaller number of fowls. There should be a board in front, or in front and rear both, with triangular feeding troughs. When the troughs are emptied, they may be removed, rinsed and filled with water, or pans of water may be placed on the feeding boards, on which also gravel should be frequently scattered.

The chickens are fed three times a day, at day light, at noon, and at dark. The feed is scalded meal of semi-fluid consistence, Indian meal being mingled with meal of other grains, or other soft food being occasionally substituted. Barley and buckwheat are excellent. The trough should be scalded out once every day, and the food given be always freshly mixed. Any quarrelsome bird, and any drooping one, should be removed at once, and others substituted, so as to keep the coop full. If there are not enough birds to fill the coop, a partition should be inserted between the bars to contract the space. Such coops may best stand in open sheds, where they will have fresh air. Those who try them once will continue their use.



FATTENING COOP FOR 24 FOWLS.

"Cramming" has been written down and talked about in this country, as if it were one of the most horrid and cruel things that could be done to poor dumb things. The truth is, the birds are highly pleased with the operation. They are not hurt in any way, and like their food so, as well as in the natural way. A fowl is held in the lap, and rolls of meal, mixed stiff with milk and a little suet, are taken by the crammer in one hand, and dipped in milk and dropped down the throat, while with the other hand the mouth is held open. The little finger is used to help the cram well down into the throat, and the bird swallows it with satisfaction. Sometimes it is well to stroke the throat gently to assist the swallowing. The crop should be empty before one begins to cram, it should be well filled, and in 3 hours it should be all digested. A little Cayenne pepper aids digestion, and is good to give now and then. Crammed fowls fatten much more rapidly, and may be made much fatter than those which pick up their food; and if the process is successful, as it usually is when the fowls are kept quiet and clean, gently handled and supplied with gravel and fresh water regularly, no evidence of disease can be discovered. If, however, it be long continued, and they do not fat fast, nor digest all of one meal before the next is given them, and the water is stale, and they quarrel, etc., before they become very fat, they will be likely to show by white combs and droopy looks that they are diseased. Such fowls must be given their liberty, for they will not be fit for the table, and should never be sent to market unless in perfect health.

Imperfections of Forced Queens.

BY BIDWELL BRO'S, ST. PAUL, MINN.

The system adopted by American bee-keepers, during the last several years, in attempting to Italianize their apiaries in compelling the bees to replace their queens removed, by rearing them from worker eggs or larvæ, is one of oft repeated disappointment and numerous failures. The only apparent exception to it is after, by long experience, one learns the evils to be avoided. A deficiency of honey and pollen as food, or a want of bees to furnish, and warm weather to help prepare it, produces a dwarfed or imperfect growth, which even an abundance thereafter can not wholly replace. The essential conditions necessary to natural queens which attend natural swarming are, an excess of mature bees, maturing brood to take their place, an abundant yield of honey and pollen with fair and warm weather. By repeatedly placing a swarm under these circumstances, we have swarmed them out 6 times in 64 days, obtaining 48 natural queens. In forcing queens, one or more, or all the previously mentioned conditions are wanting, which materially affect the forced queens, leaving you one or more queens poorer than the one you take away. A worker larva 6 days old, which is not until then transformed into chrysalis, can not be converted into a queen after that, because only 5 days are allowed a queen larva before transformation and sealing, nor can a worker larva 5 days old be altered to a queen, as some time is required to effect the change; hence, the longer time would produce the more perfect change, as in the natural queen they are started from the egg. We have repeatedly tried the different days of development of the worker larvæ for forced queens, and found those started nearest the egg the largest and best, those taken in the later part of the fifth day seldom hatching, those on the sixth never maturing. In their desire to replace their queen they strive to do it in the shortest possible time, and the worker being but an imperfect queen, which is dwarfed by cold, or imperfect food and reared in a small cell, one or more in an advanced stage is taken; they enlarge the cells and alter the food, and one or more of the youngest larvæ are taken, until as many queens are started as their time and resources admit of, covering all likely failures. Now the queen from the most advanced worker larva hatches first, and having been fed and dwarfed for a worker longest, is the poorest, and only one being needed it is allowed to kill the rest, which are the best. For natural queens the cell is built first, and the egg, or larva, not being in the way, the base of the cell is made broader and larger, while the base of the forced queen's cell is unavoidably contracted.

There is still another difficulty that must also be avoided. In their selection of eggs or larvæ (on account of the size of the cells, as both are fed alike and are similar in appearance), they choose occasionally drone eggs or larvæ instead of the worker eggs, and failure thereby occurs. A natural queen ordinarily hatches in clear and warm weather, and in two or three days flies out to meet the drones, and in two or three days more commences laying, but if retarded two or three weeks she gradually loses her desire to meet the drones. Each day's delay then, to say the least, reduces her prolificness, and as she only flies out when the temperature is near summer heat, many days often elapse (even clear ones) at the time of year when forced queens are ordinarily reared—early or late in cool weather.

The Manufacture of Drain Tiles.

In our last number (page 356) Mr. J. W. Penfield, of Willoughby, Ohio, described the sheds, kiln, etc., of his tile works. We reluctantly divided the article, and so in what follows must refer our readers to it for a fuller understanding of the subject. The clay pit is a semi-circular dishing place within the horse track, with plank sides. From this, the clay, of such quality as is described in the article referred to, is shoveled into the tile machine. Here it is worked by horse-power and moulded into the shape of tiles, the clay being forced out horizontally through dies at the bottom of the machine. The clay tubes are received upon drying boards, as they are pressed through the dies, cut into suitable length for the tiles, allowing for shrinkage in drying and burning, and placed at once upon the drying racks. These for convenience of

switch is provided at each end of the shed to transfer empty cars. Fig. 5 shows a switch; timbers 6×6 inches square, and 8 feet long make the rails of the switch track, and 2×4

on the top, nor at the sides of the kiln, as there is more liability for them to crack or be poorly burned. After the 8th course is set, four or five courses can be laid horizontally over the tops, close together, all over the kiln. Then put on two courses of bricks flatwise, and so as to break joints over them, and the setting is completed. After the door is bricked up, the kiln is ready to fire. A moderate fire for the first six hours should be made, by using large sticks of wood, and placing them entirely outside the flues, building the fire at the end next the flue. In this way the wood will burn slower than if the fire were made at the other end. A little heat and smoke is all that is necessary at first to start the tile sweating, and prepare them to

receive more heat, which may be made by pushing the brands partly into the flue. At the expiration of six hours more, the wood may be

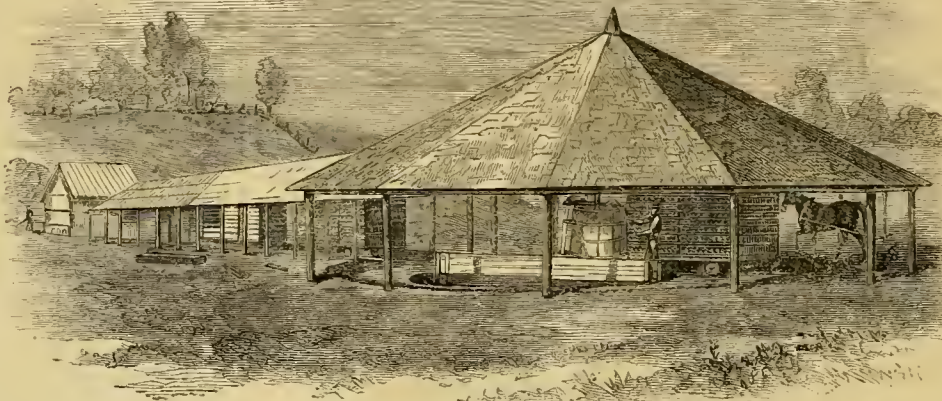


Fig. 1.—DRYING SHEDS.

scantling set edgewise partly "halved" with the underside of the rails hold the rails, and form bearings for the gudgeons of the switch wheels. These cars are a great saving of labor in moving and handling tile, and will soon save their expense. Tiles dry quicker and straighter, and less than one-half the expense for lumber, will dry more tiles in this way than when packed close in a wide shed, on stationary shelves. The liability to breakage is materially lessened, as much of the handling is avoided, the tiles remaining on the cars till dry, and frequently not handled, till taken from the drying boards, to go into the kiln. The drying boards vary in width to suit different sizes of tiles. In the en-

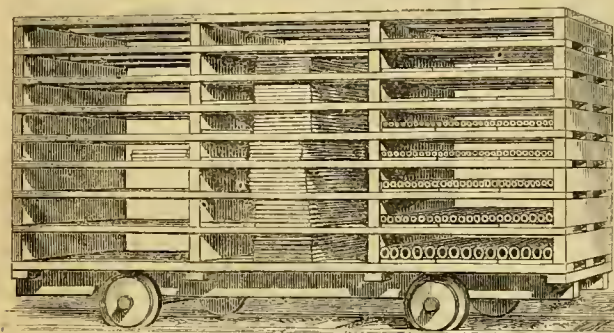


Fig. 2.—DRYING RACK.

moving are cars upon a rail-track, described by Mr. P. as follows:

"The Drying Racks or Cars, should be 12 or 14 feet long, and the length of three tiles wide ($14 \times 3 = 42$ inches), divided into three spaces for holding the drying boards. The bed pieces for car are made of 4×4 hard wood scantling; axles 3×3 of the same stuff. Wheels may be made of a log hard to split, 1 foot in diameter, turned with a flange, 2¾ inch holes being made for the axles. After the axles are spiked on the bed pieces, then spike on 4 2×4 scantlings, as long as the car is wide, flatwise on the top, and it is ready for the first course of shelves. The shelves are inch boards, 5 inches wide. Planks 2 inches thick, 5, 6, 7 and 8 inches wide are set edgewise, and nailed fast, to support the rest of the shelves. A car when finished is 6 feet high, and will hold 1,000 2-inch tiles. Tracks for the cars to run on are made of 4×4 hard wood scantling, and firmly spiked to ties bedded in the ground. Fig. 4 shows the best way to splice the rails. In making tiles, a car is run to the machine, and when filled, is drawn by a horse or pushed by two men under the drying shed on its way to the kiln. A

graving some are shown filled with tiles, and in place in the car, others are piled up in the middle division. When thoroughly air-dried, the tiles are removed from the cars to the kiln.

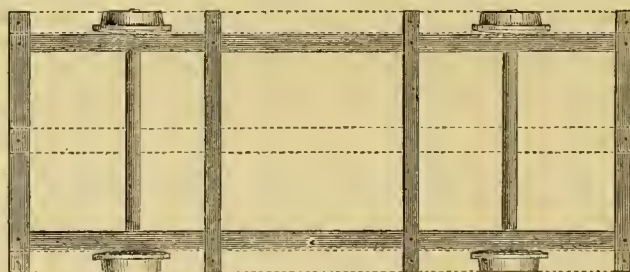


Fig. 3.—BED PIECE OR DOUBLE TRUCK.

Setting and Burning Tiles.—Tiles are set on end one course above another, putting small ones in the large ones—1½-inch go inside 3-inch, 2-inch go in the 4-inch, 3-inch in the 5-inch, and



Fig. 4.—SPICE FOR RAILS.

the 4-inch in the 6-inch. Larger tiles than 3 inch should not be set on the bottom course, nor

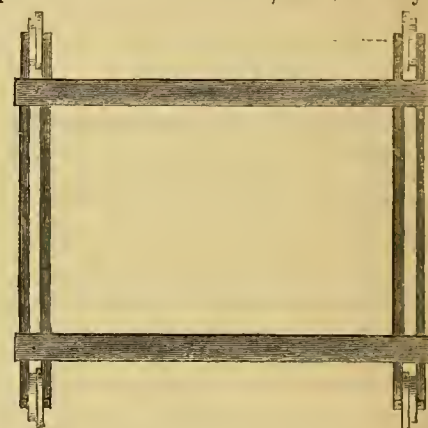


Fig. 5.—SWITCH FOR CARS.

put the whole length into the flues and the doors closed, with a good draft under them. The flue doors should be hung on an iron frame, fastened in the arches, when the flues are building. They are used to regulate the draft at all times during the burning. After the doors are closed, there is but little danger of too much firing, if the fires are allowed to burn evenly, and are kept at the ends of the flues. As soon as the corners and heads of the kiln get red hot, a full blast of fire may be kept up until the flues come to a white heat the whole length. By this time the heads of the kiln will be burned, and the heat tending to the center. Care in firing should now be used, as the flues and lower course of tiles are easily melt-

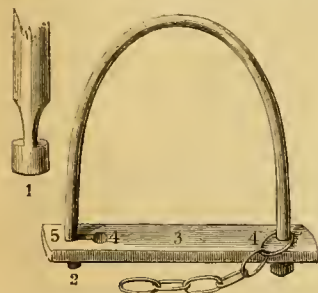
ed. Sufficient time must be given after a fire is built to let it burn down, and the flues allowed to darken before building another. If there appears any trouble in getting the heat to run to the center, the draft at both ends can be increased by leaving the doors partly open, which will drive the heat to the center, and with a few good fires the whole length of the flues, the middle of the kiln will begin to settle. In case the fire should leave the heads before they settle or are properly burned, the middle

should be allowed to settle, and then the flues closed tight at one end, and the doors left open at the other end, and all the firing done there until the opposite head settles; 6 hours will generally accomplish this, and then the fire can be changed to the other end, and the same plan adopted till the kiln is finished. If a kiln works as it should, it will burn evenly, commencing at the corners and spreading each way until the whole is heated. After the middle gets thoroughly hot, six hours will finish it. Three days and two nights, if the tiles are properly dry when set, will burn a kiln well. A kiln should be provided with a roof that can be taken off, or shoved away from the top of the kiln when hot, or while burning, in fine weather. In case of rain during the first 24 hours, the kiln should be covered; after it is hot all over, the rain will do no harm. In case of high winds blowing in one direction, a wind-brake can be put up on the wall of the kiln, on the windward side, which will prevent its affecting the top of the kiln. Some burners practice covering with clay as fast as the tile get to a certain heat (or when nicely red). This practice would help in windy weather, and is well enough at other times.

It is impossible to be successful in burning without a **GOOD KILN, good wood, and dry tiles.** A little experience, with a *good rig*, will enable any one with ordinary skill to burn successfully. The great art is to tell when they are burned enough. This is determined by their settling. Good clay is sure to shrink when well burned. One-half inch to the foot is, perhaps, the average shrinkage, which would make four inches in a kiln of eight corners. Some places will settle more, and some less, according to the heat. When the last fires are built, the doors should be left closed, and the draft shut off, that the cold air may not crack the arches or tiles. There is liability to get some soft tiles in every kiln, with the best management, and these, if not cracked, should be burned over."

A Long-used Stall Fastening for Cattle.

The comfort of his cows should receive the attention of the dairyman, nearly as much as provision for their maintenance. The distressed beasts which poach up the mud and manure in the cold wet barnyards, and stand back up against the



north-easters of a whole winter, are only more miserable than those who have their heads locked in between two upright stanchions in narrow-as-possible stalls. Neither know much of the comforts of the life of a well kept dairy cow. Geo. Hatton, of Warren Co., Ohio, sends us a description and drawing of a neck-yoke for tying cows in stalls, which we were familiar with many years ago, and which really looks like the portrait of an old friend. The yoke consists of a bow and a cross piece. The bow is of hickory or ash, with one end shaped as shown at 1, by cutting a notch on each side. This is the end marked 2 in the cut. The other end of the bow has a knob or ball left upon it. The cross piece (3) connects the ends of the bow, and is made of hardwood $\frac{3}{4}$ to 1 inch thick, 3 inches wide, and

about as long as a cow's neck is thick. There are 3 holes bored in this piece of wood; 2 are inch holes, (4, 4); the other is a $\frac{3}{4}$ inch hole (5), a little distance from one of the inch holes, and between the two holes a slot is cut, so that the end (2) of the bow being passed through the inch hole on the right, and also through the big hole on the left, will spring through the slot and into the hole (5) where it will hold. The yoke hangs on the cow's neck in the position as shown, and by it she is chained or tied. A cow can turn her head and neck in it very easily. It is hardly possible for her to split or break it, and it is perfectly secure, and forms a cheap and very convenient fastening for cows and young stock.

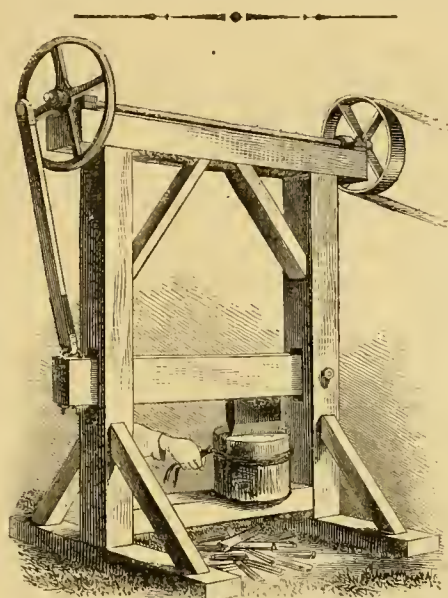


Fig. 1.

Splitting Wood by Horse Power.

A tread horse-power, with circular saw attached, affords a means of reducing fire wood to suitable lengths for stoves, and as stoves are constructed now-a-days, it is desirable to have it in very short lengths, sometimes requiring even 7 cuts in 4-foot wood. The relief afforded by the horse-power to back and arms is so great, that we take the splitting as mere pastime, and cheerfully "peg away" at the blocks. This labor too may be easily and quickly done by Dobbin, and we figure a simple machine for the purpose. It is a frame of two uprights of pine or chestnut, about 12 inches square, and 6 feet high, framed substantially as shown, and set and braced in 4-inch sills about 6 feet long. The knife is a blade about 12 inches long, $\frac{3}{4}$ to 1 inch in thickness, and brought to a rather obtusely wedge shaped, steel faced edge, and is set in a 4×8 hard wood stick, and secured by strong bolts with large and strong washers to strengthen the wood, lest a twist of the block might split it.



Fig. 2.



Fig. 3.

One end of this "ax helve," if we may so call it, is set by a strong bolt in a mortise in one of the uprights, and the opposite end passes through the opposite upright in a long mortise, to give it freedom to move up and down. The ax, or

splitting blade, is set near to the fixed end, the position varying somewhat with the motion to be given to the other end. The frame sustains upon the tops of the uprights a rod running in metal bearings, which has a belt-pulley on one end, and a fly-wheel on the other. A pitman connects the fly-wheel with the end of the ax bar, and gives it an up and down motion. The speed may be determined by the size of the pulley, and ought to be about 120 strokes a minute. The motion of the blade is 2 inches or more. The height at which the ax is set above the strong hard wood bottom piece, must be sufficient to take under the largest sized blocks that will be used. The best way to split the wood up is to hold it by a strap passed around the block, and to cleave it by parallel splits across in one direction, and then by others, at right angles, if for firewood, (fig. 2,) but obliquely if for kindlings, (fig. 3). One such machine will split pitch pine for kindlings for a whole village, and supplying kindling wood might be made a source of considerable profit. In many of our larger cities such kindling wood is sold in great quantities, and to a very great extent has taken the place of charcoal. The pieces are about 5 inches long, and when put in little close bundles, 8 inches in diameter, intended to be just enough to kindle a fire in a common coal stove, sell for 3 to 4 cents per bundle in New York and Brooklyn.

Spelt, or Spelt-Wheat.—(*Triticum Spelta*.)

We have had several inquiries in regard to

this grain. The Swiss and German readers of the *Agriculturist* remember it, and want to get seed and cultivate it here. There are both winter and summer, bearded and bald varieties, and were Spelt as much cultivated as is wheat, it would probably sport into as many different kinds. Spelt is remarkable for having adherent chaff or husks, like barley, which it very much resembles in its marketable condition, though in growing it looks like wheat. We give drawings of two kinds. Fig. 1 is a Winter Spelt, and fig. 2 a Summer variety. It does not require quite so strong a soil as wheat, and bears an open winter better, and some varieties are especially valued for the stout rigid straw. It is cultivated in North-

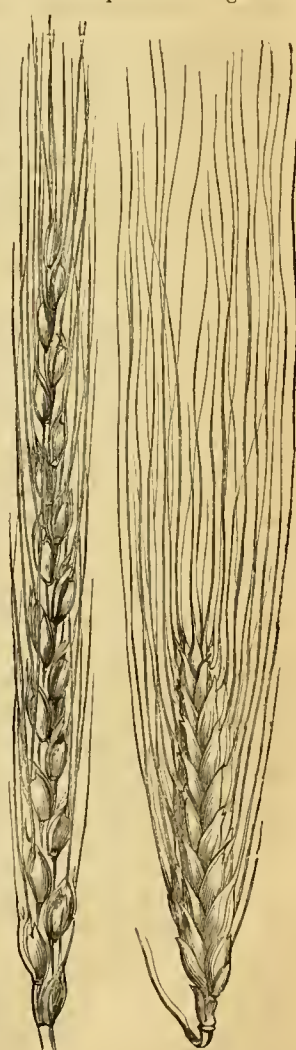


Fig. 1.

Fig. 2.

ern Italy and Switzerland, and is valued for the fine white flour and starch made from it, due to its containing more starch than other kinds of wheat. Spelt weighs 36 to 40 lbs. to the bushel. It has been cultivated in the United States, and has done well. Seed may be got through some seed importer.

Walks and Talks on the Farm.—No. 35.

I sent my Amber wheat to the city yesterday. I had made up my mind weeks ago to sell when I could get \$2.50. I could have got it before I threshed. But the price fell to \$2.25 before it was ready, and I held on. Yesterday I was offered \$2.55. This was what they were paying for the general run of amber wheat, but I thought mine better than the average, and asked twenty-one shillings. The miller said he did not wish to pay more to one than he paid to others, just justifying those farmers who say it does not pay to clean their wheat and try to furnish a good article. I have always contended that the better you could make it, the better price it would bring. Such certainly ought to be the case, and I believe it will be found so as a general rule. Well I was finally offered \$2.61, and took it for the one load. The miller, after he had bought, said it was the best wheat he had seen this year, and showed it to several other millers. He took the whole crop at \$2.63 $\frac{1}{2}$. I presume it will be higher—but this is high enough—for those who have to buy. But is there not a pleasure in raising a good crop and getting a good price for it?

I lost considerable from not having barn room for all my barley. That which was stacked out of doors was weather-stained, and will not bring as much by 10 cents a bushel, as that put in the barn—though fully as good a sample in other respects. My loss this year from stacking would pay the interest on a good sized barn.

It annoys me to see farmers sacrificing their barley, simply for want of correct information. Large quantities have been sold in this section at 85c. to 90c. per bushel, and a dollar is about the outside figure for choice four-rowed. Farmers seem to have been seized with a desire to sell at once, and have rushed in the crop and taken just what they could get, from the idea that as the yield was large, prices must be low. But they forget that hitherto a great portion of our barley has been brought from Canada, and that, large as the crop is with us, it is not large enough to supply the demand, and that the deficiency must be obtained from Canada. The price at which Canada barley can be bought, therefore, will determine the price in this market. At the time when farmers were selling here for 90c. to \$1.00, barley in Toronto was worth 60c. in gold—say 90c. in our money. The duty is 15c. more, also in gold, say 22c., and the expenses of buying, commission, freight, etc., are about 20c. more, so that a Rochester malster can not get barley from Canada for less than \$1.32 per bushel. Had our papers given this information, they would have saved to the farmers of Western New York over a million dollars. As it is, we have lost all the benefit of the duty on barley. I called the attention of one of our largest brewers to these facts. "Well," said he, "I am buying all I can handle at 85c. to \$1.00, and of course shall not pay more as long as I can get it for less. But," he added, "I shall pay \$1.25 if that is the market price." He admitted that they could afford to pay it, and the only reason barley has sold so low is, that farm-

ers were afraid to hold it, under a mistaken apprehension that the market was overstocked.

Potatoes are rotting badly—especially the Mercers. I am told that a farmer in this neighborhood offered to sell five acres for five dollars, and that, after examining the crop, the offer was refused. The Squire says his Mercers are more than half rotted. On the low land my Flukes are considerably affected, but on dry upland they are excellent. They are about the best variety I have yet raised—little inferior in quality to the old Mexicans, and not unlike them in shape and smoothness of skin, while they yield far better. It seems essential, however, to change the seed frequently. On good land, I believe, as many Flukes could be raised per acre as of Peach-blows. But it would be necessary to plant much thicker in the rows, and the rows closer together. I would have the rows only two feet four inches apart, and the sets ten inches in the rows. Manure high and cultivate thoroughly, and on good warm soil a great yield might be expected. Many people object to manure, but if it is thoroughly rotted, I do not believe it promotes disease. The trouble with Peach-blows is, that they require a long season to attain their best yield. They will usually keep growing until frost comes. But this year the tops of mine withered up the second week in September, just at the time when the tubers ought to have been making their greatest growth. The result is, that there are a great many small, immature potatoes. The yield, as it is, will be large, but if the season had been favorable for continued growth until the middle of October, I think we should have had three hundred bushels or more per acre. The Flukes, which mature three weeks earlier than the Peach-blows, had attained their full growth, and suffer little from this early withering up. The cause of this early withering of the Peach-blows I do not know. We had a severe frost on the 22d of September, but the tops of the potatoes were withered up a week or ten days earlier, and before we had any frost. It does not seem to be the disease—at all events there are as yet no symptoms of rot on the tubers. But perhaps there will be in a few days.

The Squire paid me a visit this morning, and we walked over the whole farm. He says my young clover, where we put the superphosphate and other artificial manures on the wheat, *is the best he ever saw*. At harvest it looked thin on the ground and quite poor. But after the wheat was cut, it improved rapidly. It is now as thick as it can stand, and is nearly a foot high. I am saving it for the sheep I intend to buy for fattening this winter. As a general rule it does not pay to feed young clover too close in autumn, especially with sheep, as they sometimes eat out the crown. But I think where there is a good heavy growth, they will not injure the plant.

When we came to the corn lot, he had a good chance for "a dig." The cultivators were still in the field where they were last used. "Well, now," said he, "if that was on my farm I should not be surprised, but I thought you were going to set us a better example." I was fairly caught. I told him we intended to have gone through the field once more. "Yes, but that is two months ago, and I should think a model farmer would have found or made an opportunity to have got them home before this."

They shall not be there another day—or possibly they will be there all winter. I will send a wagon for them purposely. I might have done so before, but thought we might have a

chance to bring them home without sending a team on purpose for them. But I am satisfied that the better plan in such cases, when a tool or implement is done with for the season, is to put it up at once, even if you have to send a man half a mile to get it. But my precept is better than my practice. I try to get things put up, but it seems almost impossible.

But the Squire thought my corn was a capital crop. It was injured by the severe frost three nights ago (Sept. 22), and there will be plenty of nubbins for the pigs. It is very unsatisfactory food for fattening hogs, but if well steamed, cob and all, and mixed with sound corn meal, or barley meal, it will give a pretty good account of itself. To feed it alone raw is a great waste. Last year I kept my soft corn in a crib, made of rails and covered with boards, for several months, feeding it out in small quantities through the winter. In frosty weather it would shell and grind nearly as well as the sound corn—and that which was left on the cobs was not lost, as the cows and pigs cleaned it all up. But this year, if I mistake not, there will be a good deal of corn that will be altogether too immature to keep in this way. Still, there can be little doubt that such corn will ripen to a considerable extent in the crib, from the sap in the cob. Of course the crib must be a narrow one, or the corn, if very soft, will be liable to mold. In very cold weather, however, there is not much danger of its spoiling. I see the *Agriculturist* for last month, in its "Hints about Work," recommends spreading the soft corn to dry on a loft. This is a good "hint," and will be worth more to me this fall, as some of the old correspondents of the *Genesee Farmer* used to say, "than the subscription price of the paper for a year." It is a simple matter, but farming is made up of just such simple things, and I confess I had not thought of spreading out corn to dry. It is no great "discovery," (excuse me Col.) but it is just such little "reminders" that make these "Hints about Work" so useful.

We are making a cellar under the old barn. The soil is very dry, and I spread a few cart loads of it on the top of the manure on the wettest parts of the barn yard. I was astonished at the effect. It absorbed the moisture and made a drier surface for the cattle far sooner and better than a good layer of straw. Of course we want some straw as well, but it is evident to me that a few cart loads of dry sand, or what is far better, dry muck, would save a good deal of straw in littering yards and stalls.

Sand, too, when mixed with manure, has the effect of increasing fermentation. Prof. Way's experiments proved this to be the case to an extent far greater than any one had previously thought possible. In our cold climate, where it is difficult to get manure ready for spring crops, a little sand scattered occasionally on the manure yard would increase fermentation and prove beneficial.

I have two cows, mother and daughter, that both leak out a good deal of their milk. Is there any cure for it? I am now milking them three times a day, and this prevents it, but it is some trouble to go to the field just to milk these two cows. But we get nearly or quite as much milk from them at noon as we formerly did at night. But we do not get near as much at night as we do at noon. Why is this?

A lady met me in the city yesterday and told me she had just seen the Deacon, and that he said I "was going to make farming pay."

Good for the Deacon! I believe he sincerely wishes me success—and that, I fear, is more than I can say for all my neighbors. They are all very nice people too. If I was sick, or in trouble, they would give me their aid and sympathy. If I want to borrow, they lend freely—and that is a pretty severe test of neighborly feeling, especially when you are not very prompt in returning the articles. I have had many evidences of their kindness. But they don't think I shall succeed as a farmer—and possibly they don't want me to. Why? Will it hurt them? If I was a speculator and should buy their barley at a dollar, and sell it again in two or three months for a dollar and a half, what I made they would lose. But if I should succeed in renovating my farm and should double my crops, would they be any the poorer?

The great objection to my farming is, that I "spend too much money for hired help." But I cannot get along with less. And I find the best farmers expend the most money for labor. "I have always kept a great many men," said John Johnston, "but I was always with them and kept them at work." That is the point. If the labor is well directed, and is judiciously employed—if the farmer plans his work so that there shall be no loss of time, he can better afford to hire extra help, than to let teams lie idle.

We cannot farm now as when the country was new. If we attempt it, as many do, poor crops and run down farms will be the result. We must expend more labor and more capital. We must cultivate our land better, feed higher, make richer manure, and see that it does not run to waste. I am fattening over fifty hogs. "It would pay you," said a good old-fashioned farmer in the neighborhood, "to let a man devote his whole time to feeding them." No doubt about that; but you say I keep too many men already. My horse barn is separate from the other buildings. The litter is thrown out into a loose heap, and if suffered to remain so, soon heats, and becomes fire fanged. I draw it with a one-horse cart into the barn yard, and the pigs work it over and make it into the richest kind of manure. But this takes labor. I clean out the pigpens every day, and give fresh litter. But this, too, takes labor. One of my neighbors says, I wash my pigs with warm water and castile soap. This is one of his jokes. But I *do* try to have the pigs and the pens washed occasionally, by throwing water on to them with an aquarius. The pigs evidently enjoy it, and thrive better; but this, too, takes labor. I am drawing the potato tops into the barn yard for the stock to tread into manure. It will pay twice over, but it takes time. The diseased potatoes I steam up for the hogs, and mix some corn and barley meal with them while hot, mashing up the potatoes. It makes splendid food, and is the best way to use potatoes partially decayed. But the sorting out the decayed ones, washing them and steaming and mashing with meal, involves considerable work. It would be much easier to have a pen of rails on the ground, to throw all ears of corn into the mud, and let the pigs do their own shelling, grinding, and cooking. I know more than one of my critics that adopt this "system," and of course, they do not hire much extra help.

To farm properly, we need capital and labor. The latter we are now getting at fair rates, as compared with the price of living. And the thousands of stalwart emigrants that arrive every month need work, and farmers, at present prices of produce, can afford to employ them. I have a Prussian working for me that came over a month or two ago. He cannot speak

English, but when you show him what to do, he will do it faithfully and well. He is a right, good man, and I should not object to see all our shipping engaged in bringing such men by thousands to our shores. We have land enough and work enough. But we need more capital and a lower rate of interest. And surely those men are to be honored who, having large capital, (I could wish I was one of them,) go on to a farm and employ it in developing the resources of the soil. There are hundreds of such men, and the number is rapidly increasing. Their influence and example must tend to the improvement of our general system of agriculture.

The City Poor.

No country resident can, without a personal examination, have any adequate conception of the poverty and low condition of multitudes in New York City—a center to which tend the poor and degraded from almost every part of the globe. The first week after coming here to reside, we called at the Ladies' "Five Point Mission," in the "Old Brewery," and on going into a school room where were some hundreds of children, gathered from the streets, and washed, and combed, and dressed in the clothing contributed, almost the first object we saw was one of these children clad in garments formerly worn by our own recently deceased child. The garments had been added to a parcel made up for this Mission. Our emotions can be imagined. Since then, we have often visited that famous locality to witness the success of the enterprise, though for a dozen years past, our residence in the country has made these visits less frequent than formerly. Last week our leading artist brought to us, without previous notice, the engraving on page 398, which he had, for a long time past, worked upon at odd spells, grouping together some of the scenes he had witnessed, in various visits to the locality in which he had become interested. These are mainly from the Five Points House of Industry, though their counterpart are to be found in the Five Points Mission, occupying the site of the "Old Brewery," a picture of which, as it was, is seen at the left. Our readers will be interested in the picture, and a brief account of the locality.

The "Five Points" is a small open space or square, a short distance Northeast of the City Hall, so named because the streets so meet here as to leave five points or blocks of buildings around the open space. This place was once a swamp or pond, where Fulton made some of his first experiments in applying steam to propel boats. It was subsequently filled in and drained, streets were made through it, and it became the residence of the poorest people, addicted to most revolting forms of vice. Little children learned to be thieves and drunkards; they went about half naked even in winter, and lived by stealing and begging chiefly. Murders were often committed there, and respectable persons seldom, even in daylight, went there unless accompanied by policemen. On the south side of the little square stood an old stone building, formerly used as a brewery, which, 25 years ago, was occupied by about 200 families of the lowest and poorest class, some above ground, and some below, crowded into small rooms, but few of which admitted the full daylight. Rag pickers, beggars, street women, etc., hired lodgings at sixpence or so per night, and thus about a thousand human beings of both sexes were nightly packed in upon the floors, like so many

swine, and as thickly as they could lie down.

In 1850 the Ladies' Home Missionary Society of the Methodist Church, determined to try to do something for this terrible locality, though it seemed like hearing the lion in his den. They began in the building opposite, but soon bought the entire "Old Brewery" building and grounds. They were incorporated as a Society, by Act of Legislature, in 1856, and have continued in active and very successful operation to the present time. The Old Brewery was demolished, and on its site was erected a large, commodious, brick structure (not shown in the engraving), containing several school rooms, chapel, bath, and washing rooms, offices, etc., and a large number of domicils or suites of rooms, which are furnished rent free, to poor, worthy families, and to others whom they attempt to reform and elevate. We have to-day seen, in different parts of the building, hundreds of poor, almost homeless, and parentless children, gathered in from the surrounding streets, alleys, and tenements, all neatly washed and clothed, and under the tuition of faithful, self-sacrificing teachers. During last year, over 1,200 such children were brought under its influence, the usual number connected with the Mission at one time, being about 400. The children are clothed, receive food, and instruction, etc. Many of the first ladies of the city meet weekly at the Mission, to prepare new garments, and assort and adapt the hundreds of parcels contributed from other places. Over 4,000 garments were used in 1865, besides boots and shoes, and about 40,000 meals or rations, were given out. As fast as children are prepared for it, those who can be obtained from their parents, if they have them, are provided with permanent homes in the country.—We have not space to describe the work at length. Every visitor to the city should plan to drop into the Old Brewery Mission, say between 9 and 10 o'clock A. M., or between 1½ and 3 o'clock P. M., and see for themselves the hundreds of interesting human beings gathered there. Let others send 25 cents to the Superintendent, Rev. J. N. Shaffer, (Five Points Mission, 61 Park-st., New York City,) and receive for a year the monthly journal called the "Voice from the Old Brewery"—well worth its small cost.

We have spoken particularly of the "Old Brewery Five Points Mission," as it is the original enterprise, and has continued on uniformly, and somewhat quietly in its large and efficient work. Other enterprises have grown out of it, each of which is doing a valuable work—particularly the Five Points House of Industry, under the charge of Mr. S. B. Halliday, and the Howard Mission, under Mr. Van Meter, who was previously employed as the Agent of the Old Brewery Mission for five years.

IN THE PICTURE, No. 1 is a group of the bright, ragged, saucy, dirty children as they come in from the streets and alleys. No. 3 is a view in the school room where the children are seen clean, combed, and clothed. No. 2 is a Hospital where the sick ones are, some in bed, others able to be about, and read or play quietly. No. 7 is one of the great sleeping rooms for boys. No. 8 is the nursery. No. 9 the great play room on the ground floor—the same room which is seen in No. 5, the middle picture, ornamented with greens, and with long tables set in it. This represents the children gathered for a Thanksgiving or a Christmas dinner; the blessing is being asked. The table is bountifully spread with the many good things sent in by the kind friends of the school.



SCENES AT THE FIVE POINTS MISSION HOUSE.—(See page 397.)

The Bayberry or Wax-Myrtle.

(*Myrica cerifera*.)

Near the coast of the sea, and of our great lakes, is found growing in almost every variety of soil and situation, a low and rather irregular shrub, known as the Bayberry. It is quite dwarf and stunted in all its parts, when it grows in the sandy soil of the shore, but when it is found along the borders of marshes, it is much more luxuriant. The usual size of the leaves, and the general aspect of one of the smaller branches, are shown in the engraving. The leaves are entire, or with a few notches near the apex, of a fine shining dark green, and thickly sprinkled over with minute resinous dots. When slightly rubbed, the leaves give off a pleasant balsamic fragrance. The staminate and pistillate flowers are borne on different plants, both kinds are produced in small cone like scaly aments or catkins, and not at all showy. The fertile flower clusters produce several small one-seeded berries, or more properly nuts, which are at first green, but at maturity they are covered by a whitish granular powder, which is wax. This shrub extends from Nova Scotia to the Gulf of Mexico, and in some localities is turned to considerable profit. Its fine green leaves, which do not readily wither, are extensively used in making up the bouquets sold in our city streets, and are one of the most available greens for this purpose. The great value of the plant, however, is in the wax with which the berries are encrusted. The berries are boiled in water and the wax melts, rises upon the surface, and may be dipped off or allowed to harden there as the water cools.

Where the shrub abounds, the wax, or "Bayberry tallow," as it is frequently called, is collected in considerable quantities for domestic use and for sale. The wax is greenish white, has a slight odor, and is more brittle, and has a more greasy feel than beeswax, and it melts at a lower temperature than that does. It is used for making candles, either alone or mixed with tallow. When mixed with tallow it gives greater firmness, and the candles in burning diffuse a pleasanter odor. The wax is used in some preparations for leather, and it is the material employed for stiffening the ends of circular lamp wicks. Another species, *Myrica Gale*, the Sweet Gale, found in wet places, has less fragrant foliage, and its fruit does not furnish wax.

OUR NATIVE ASTERS.—In this month of October the road-sides and fence-corners are gay with the bright yellow of the Golden-rods and

the blue and purple of the Asters. Many of our wild Asters are prized in Europe as garden plants, but they are so common that we seldom find them in cultivation in our gardens. While as single flowers they are a little coarse, the effect of a mass of them is fine. They are

animals, no matter whether they have two or four legs. If one has trees in grounds usually approached by a curved path, they stand a poor chance when snow is on the ground. There are certain heathens who will strike a bee line with their sleighs and sleds from the gate to the house, and if there are any young trees in the way, so much the worse for the trees. We once suffered very severely in this way, and when remonstrance was made, all the satisfaction we got was the information that there were no roads when snow covered the ground. — We know of no way of dealing efficiently with these two-legged brutes, but there are some small four-legged ones that need looking after, and whose depredations can be warded off. Mice are often troublesome in a young orchard. If clean culture has not been followed, it is not too late to remove all dead weeds and other rubbish that can

harbor mice. The little fellows like to work under cover, and the remains of weeds and grass afford them convenient shelter. They have a grand time under newly fallen snow, and it is well to head them off by tramping the snow firmly around the trees. Among the various preventives of the attacks of rabbits, none are perhaps more easily applied, or more efficacious than that proposed by Doct. Warder, at one of our pomological meetings. The rabbit is rather fastidious as to its food, and has a great dislike to animal matters. Indeed it was long ago recommended to shoot a rabbit, split it open, and rub the tree with its body, as a warning to its fellows. Doct. Warder's plan is to spatter the tree with blood. Blood is readily obtained wherever slaughtering is done, and with a vessel of this and a swab made of corn husks tied to a stick, one can bespatter a young orchard in a short time. Doct. W. states that a single application suffices for a whole winter.

The Stock and the Graft.

It has been a generally received opinion among the best observers, both at home and abroad, that the stock exercised no other influence upon the graft that is inserted in it, than to dwarf it. Prof. Caspary has published in The Bulletin, of the Amsterdam Botanical Congress, an article in which he attempts to show that some hybrids have been produced by grafting. That is, that the flowers and fruit upon a graft sometimes show a cross between those proper to the graft and to the stock. From the instances—mainly of ornamental trees and



BAYBERRY OR WAX-MYRTLE.

readily transplanted, and in the rich soil of the garden they are even finer than when they grow wild. We have not space to enumerate the best species; any that seem attractive in their wild state, will give satisfaction in the garden.

Young Trees in Winter.

Many persons seem to think that when they have set out fruit trees, they have done their part, and if the trees do not flourish, the blame is laid to the nurseryman, or they conclude that their land is not suited to fruit. Besides neglect, trees have active enemies, both biped and quadruped. A good fence, with gates securely fastened, is a great protection against the larger

roses—cited by Prof. C., we do not think he has made out a very strong argument. Still, a proposition coming from so high an authority deserves respectful attention, and we allude to it as a topic likely to cause some discussion among horticulturists. Who knows but the case of our puzzling sweet and sour apple may serve help support Professor Caspary's view?

Insects and Plant Fertilization.

SIXTH ARTICLE.

In our foregoing illustrations, insects are seen to carry the pollen of one flower to another exactly like it; or else to bear the pollen from a male flower to a female flower, belonging perhaps to a separate plant or tree, as in willows. In the present article we will call attention to a still different case, viz., that of *dimorphous* flowers. That is, where they are of two sorts, but both hermaphrodite. Instances of this kind are common enough; but, as we have room only for a single illustration, we will take for our example a pretty little spring flower which every body knows, or ought to know, the little *Houstonia*. Almost every wet pasture or meadow, or grassy bog, is decked in spring by these tiny flowers. They are all

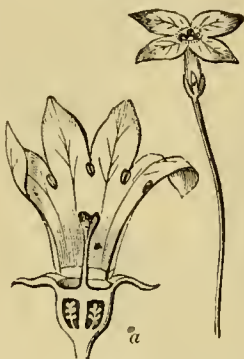


Fig. 1.—Flower of *Houstonia* or *Oldenlandia cœrulea*: 1a, enlarged view of the same with the ovary or seed-vessel, cut half away, and the corolla split down and laid open, showing the 4 stamens (anthers) attached high up, while the style is short.



Fig. 2.—Another flower of *Houstonia*, and 2a, a similar dissection of it; the style long and projecting, but the 4 anthers attached low down.

this is done, and how perfect the arrangement for doing it is, will be seen at a glance now that the thing is understood. If any small flying insect, with a proboscis about long enough to reach the bottom of the flower, should visit No. 1, it will probably smear its face with some of the pollen of the anthers it comes in contact

with; and in passing to other blossoms of that sort, it can do little more than to transfer some of the pollen from one anther to another; though it is quite likely that some grains of pollen, sticking to the proboscis, may be carried down to the stigma of the same or of the next flower. If the insect visits a succession of long-styled flowers, No. 2, it will rub its face repeatedly upon the projecting stigmas, with a mere chance that a grain of pollen, extracted by the proboscis from one of the included anthers, may be dropped by the way upon the stigma of the next flower. But suppose the insect passes from the short-styled flower, No. 1, to the long-styled, No. 2. Why, then the pollen which smears its face at No. 1, will be brushed off upon the stigmas of No. 2. And if the insect then proceeds from No. 2 to a fresh No. 1, any pollen adhering to the proboscis from the anthers of the former, would be neatly transferred, most probably, to the corresponding stigmas of the short style of the latter; and so on.

Here not only are individual flowers cross-fertilized, but the two sorts of flowers cross-fertilize; and that is what the whole arrangement is evidently for. The flowers of the *Mitchella* or Partridge-berry of our woods, which are produced about midsummer, are on the same plan. So are those of Primroses; and it was in the Primrose that this *dimorphism* was first detected, many years ago; but the meaning of it was completely unknown until Mr. Darwin made it out four or five years ago. This capital investigator also showed that, not only are these flowers, of either sort, nearly barren when insects are excluded,—which might be expected, inasmuch as little or no pollen would reach the stigmas unaided,—but even that the pollen of either sort produced much less effect upon the stigmas of that sort than it did upon the stigmas of the other kind. Indeed, he found that in some such plants, the pollen which perfectly fertilized the other sort, would not act upon its own sort of stigma at all. This is so in the Red-flowered Flax, grown in our gardens for ornament, and to some extent in a wild blue-flowered Flax; while the blossoms of the common field Flax are not dimorphous at all. All this clearly proves that in dimorphous flowers we have merely another way in which nature secures cross-fertilization; and all the dimorphous flowers we know of are fertilized by insect-agency.

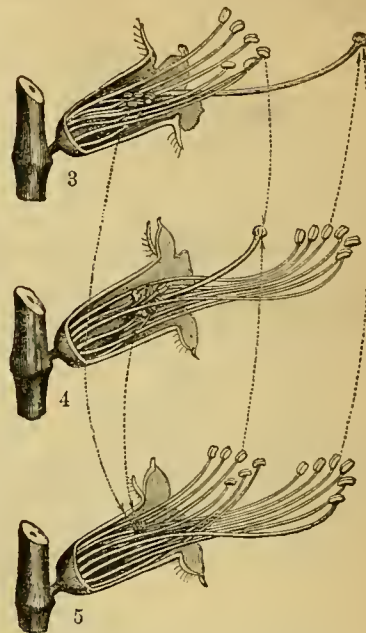
In following up this subject, Mr. Darwin lately discovered that the blossoms of the Spiked Loose-strife (*Lythrum Salicaria*) are *trimorphous* or of three sorts; and we may close this article with a very brief account of this curious case. From seeds of the same pod come three forms, in about equal numbers, viz.:

1.—The *long-styled* form; which has 6 short stamens enclosed in the calyx, 6 mid-length stamens, protruding out of the calyx, and a style which is still longer (fig. 3).

2.—The *mid-length styled* form, with 6 long and 6 short stamens. The stigma and the anthers of the long stamens of this and the last have changed places. (fig. 4)

3.—The *short-styled* form, which has 6 mid-length and 6 long stamens. The stigma in this answers, in position, to the anthers of the short stamens of the two preceding forms, its mid-length anthers to the stigma of one of the preceding, and those of the long stamens to the stigma of the other. All the flowers of any one plant are alike. The three sorts of anthers have distinguishably different pollen; and each sort of pollen proves to be more effective upon some other stigma than that of the same sort of flower.

Here, in the hermaphrodite flowers of one and the same species, are three sets of males (and in function even five sets of males), and three



Figs. 3, 4, 5.—The three forms of Spiked Loose-strife (*Lythrum Salicaria*), one side of the calyx cut away, and the petals taken off; 3, the long-styled and mid-length and short-stamened; 4, with mid-length style and long and short stamens; 5, with short style and mid-length and long stamens. The dotted lines and arrows show the routes by which pollen is effectively carried to stigmas by bees, etc.

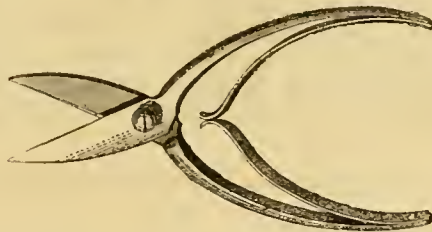
sets of females, about as distinct in action as if they belonged to so many distinct species. For Mr. Darwin has shown that only the longest stamens will fully fertilize the longest pistil, the middle stamens the middle pistil, and the shortest stamens the shortest pistil. Artificially we can make a dozen distinct crosses; but only those above mentioned, which experiment proves to be the most prolific, are very likely to be made in nature. And these are made thus: The flowers are visited by bees and the like. They invariably alight on the upper side of the flower, and insert their proboscis along the upper and inner margin of the calyx, where some room is conveniently left for the purpose, giving access to the bottom of the flower. When the bee reaches with his proboscis the bottom of the flower, where the honey is found, the long stamens of figs. 4 and 5 rub against his abdomen, and sprinkle it with their pollen. Flying to the long-styled form (fig. 3), its stigma rubs against the same place and takes some of the pollen. The middle-length stamens (figs. 3 and 5) dust with their pollen the under side of the bee's thorax, between the front pair of legs; the stigma of the mid-length pistil (fig. 4) hits the same spot. The anthers of the short stamens (figs. 3 and 4) are hit by the chin and the proboscis of the bees, the front of the head only being inserted into the throat of the calyx; and this sort of pollen only will be carried to the stigma of the short pistil (fig. 5), which rubs in its turn upon the bee's pollen-powdered chin.

What advantage has this triple arrangement for crossing over the more common dimorphous plan? Perhaps there is some economy in it or greater certainty of effective crossing. If, say only two plants grew near each other, there is only an equal chance that they may be of different forms, and so both fertile. But when there are three sorts, each capable of fertilizing the other two, the chances are two to one in favor of any two contiguous plants being of different sorts and so both productive. A. G.

Interesting Jaunt Among the Grapes.

"The Catawbas have not failed to give a crop in ten years, we have no rot, no mildew, and no trouble with insects nor birds," is a summary of our talk with an old grape grower. The reader will ask where such a favored spot can be, and we will endeavor to tell him, and as much about it as our space will allow. In Steuben Co., N. Y., is Crooked Lake, at one end of which is Penn Yan, and at the other, some 20 miles distant, is Hammondsport. Penn Yan is on the N. Y. Central R. R., and connects with Hammondsport, by steamer, which place is also reached by stage from Bath, a station eight miles distant on a branch of the Erie R. R. The general region is known as Pleasant Valley, and the grape district lies mainly in the towns of Urbana and Pulteney. The lake is deep, pure, and seldom freezes; it is enclosed by hills which, upon the west side, rise in terraces, mostly with very steep sides, while the slope of the land upon the eastern shore is more gentle. The proper grape region is upon the western shore of the lake, and extends some twelve miles from Hammondsport. The hills are about four hundred feet high, and at frequent intervals are cut through by deep ravines running down to the lake. The soil is a disintegrated shale, more than gravelly, as it is full of stones, which are often so numerous as to cover the surface. This peculiar soil is of an indefinite depth, and is of a character that insures a perfect natural drainage. One could hardly imagine a more unfavorable place to set a vine, than the best Catawba lands, at first sight appear to be. The following are the natural advantages of the Pleasant Valley region: a large body of water that secures a uniformity of temperature, and prolongs the ripening season; a favorable exposure to the sun, with shelter from violent winds; a deep and strong soil, with a perfect natural drainage. The vineyards are from five to ten acres in extent, though much larger tracts are cultivated by associations and companies. Some 3000 acres are set in vineyards, held by over two hundred proprietors. The best lands sell at \$300 to \$400 an acre, while others not so favorably located, or so well adapted to the growth of the Catawba, are to be had at less prices. The Catawba and Isabella are the principal varieties in cultivation. Delaware and Diana are cultivated to some extent, while the Concord, considering its popularity elsewhere, is not as yet largely planted. The distance of planting varies somewhat; but eight feet by six is the usual way of setting the Catawba, while it is thought best to give the Isabella a little more distance in the rows. One feature of the cultivation here is deep setting; surface roots are removed from the cuttings, and their future growth is not encouraged. No manure is used. The first year the vines have their own way. The second year they are trained to stakes or a trellis is put up. The trellis now employed is of oak posts, with horizontal wires at about 18 in. apart. The pruning is a modification of the renewal system, two canes being allowed to fruit, while two are being grown for next year's bearing. Summer pinching of the laterals, or "kites"—as they are called here—is closely followed. The fruiting canes are attached to the lower wire, and the fruit is thus brought near the ground, where it ripens better and develops the qualities necessary in a wine grape more perfectly than it does if the canes are higher. The grapes for market are cut by means of scissors of the style shown in the engraving. The fruit is laid carefully in open

crates, which are placed in the fruit house for two or three weeks, to cure. It is then packed, a work usually done by ladies, who carefully select the best bunches and place them in the boxes. The usual size of boxes is 9 inches long, 6 inches wide, and 4 inches high. The packing



SCISSORS.

is done as described on page 323 (Sept.). The small bunches are sold for wine making. There are three wine companies with abundant capital, who have extensive wine cellars and large vineyards. We can not say more about the wine business in the present article, except that the market prices for table grapes are so much higher than the wine makers can afford to pay for fruit to crush, that the wine business has not yet attained its full development. The average yield of a vineyard in full bearing is about 9,000 lbs. to the acre. The crop for the whole region is estimated at between 400 to 500 tons. The best market grapes net the raiser about 15 cts. per lb. The wine cellars are offering 10 cts. for Catawbas. We can not close this imperfect sketch of a remarkable region without recommending those who are interested in vine culture, to go and see for themselves how much the reality exceeds any description, however elaborate it may be. The scenery is beautiful, and one can look upon vine clad hills without visiting the Rhine. The enterprise has had a healthy and gradual growth from a very humble beginning. There is an air of prosperity, for every one is well to do. Fruit culture seems to have had its refining influence upon the people. Though there are so many in the same pursuit, they seem to have no jealousies, they are hospitable, and have no secrets about their cultivation. We wish this enterprise continued success, and may blight and mildew ever be strangers to the fitly named "Pleasant Valley."

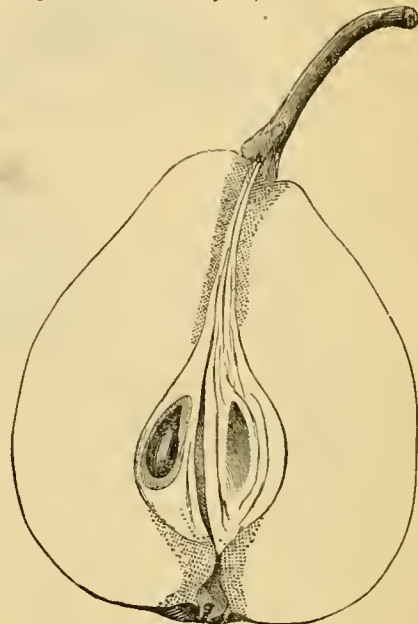
New Fruits—The Bronx Pear.

The Western New York Fruit Grower's Association, at their summer meeting, expressed in a resolution their belief that no new fruit should be put before the public, without it first has the endorsement of some Pomological Society. In the main, we agree with this, but what are we of Eastern New York to do who have no Pomological Associations to go to? True, we have a "Farmer's Club," so-called, whose opinion we had much rather not have, as it is given altogether too freely upon all subjects within the range of human knowledge.—We shall soon have an opinion on medicine from them, as they have appointed a committee to report on some chap's *bitters*! There are several new pears that we intended to submit to the American Pomological Society, but that body was put asleep for a year by fear of cholera, and we are obliged to be a Pomological body all by ourselves.

THE BRONX PEAR.—This fruit was first brought to our notice some years ago by the Rev. Wm. Clift, Comptroller of Woodlawn Cemetery, who, at our request, has drawn up the following account of its origin:

"This new pear was raised by James P. Swain, Esq., of Bronxville, about the year 1850, the last year that the horticultural exhibition of the American Institute was held in Castle Garden. The parentage has not been definitely ascertained. A large quantity of seeds taken from pears exhibited at the Institute that year, were planted. Among them were the Beurre d'Arenberg, Beurre Diel, Beurre Ranz, Colmar, Catillac, Glout Moreau, Passe Colmar, Napoleon, Easter Beurre, Duchesse d'Angouleme, Vicar of Winkfield, and some others. About eleven thousand seedlings were raised upon a gravelly soil, fully exposed to the sun and wind, that their hardiness might be duly tested. All the blighted and delicate plants were immediately destroyed, and the result of the last thinning left only five hardy seedlings, and these were subsequently reduced by accident to three.

The first of these proved to be an early bearer, giving fruit in its ninth year, and was named by



BRONX PEAR.

Mr. Swain the Bronx, from the river of its birth place. The original tree is an upright grower, inclined to assume a pyramidal shape without the use of the knife. The limbs droop somewhat with age and full bearing. The wood is of a reddish brown color, and has never shown the least disposition to blight. The foliage is a bright glossy green, and is retained until the close of the season. It is a regular and abundant bearer, setting fruit three or four inches apart, and retaining it until ready for picking. It has borne regularly abundant crops for 7 years.

The fruit has not yet been exhibited at the horticultural fairs, but has been submitted to some of our best pomologists, who have given it their unqualified praise. It has not yet passed out of the hands of the proprietor, but has been considerably multiplied. We consider it a valuable addition to our already large class of September pears."

Fruit medium, obovate pyriform. Skin, dull greenish yellow, thickly sprinkled with russet dots, which frequently run together and form patches of russet, especially near the stem and calyx, where the skin is often completely russeted. Stem about 1½ inches long, moderately stout and enlarged at its insertion, which is usually in a well marked uneven cavity, though in some specimens, where the form approaches to turbinate, the cavity is wanting. Calyx open, with short segments, set in a slight and obscurely furrowed basin. Flesh, yellow-

ish white, slightly coarse grained, very juicy and melting—sweet and rich, and when well ripened, with a delicate perfume. Season, from first to middle of September. The engraving is from an average specimen. With proper thinning, the fruit would doubtless be much larger.

Tea Roses—Marechal Niel.

Most of us can recollect when a Tea-rose was a great rarity; now they are among the most common of roses.

They are deservedly popular, for they are such free bloomers, and the beauty of their flowers, and the delicacy of their fragrance commend them to all. It is true they are tender and require to be protected from the severity of our winters—but those who really love roses will not mind this. Some of the more hardy Tea-roses, such as Safrano, may be laid down and covered with earth, in the manner described by Mr. Henderson, in September last, and it is probable that in favorable situations, all but the very delicate ones may be wintered in this way. Those too tender to be risked out under a covering of earth, may be potted and put in a cool green-house or cellar. Among the new Tea-roses none has received more universal approbation among European cultivators than the Marechal Niel. It is a seedling of M. Pradel, of Montauban, France, and was flowered this summer for the first time in this country. We saw a fine lot of it in the grounds of Mr. Peter Henderson, and took a specimen from which the engraving is made. We can only show the form of the bud and partly open flower, while the fine yellow color must be left to the imagination. The expanded flowers are large and full—but like those of other trees—less beautiful than when they are only partly opened. The foliage is good, the habit of the plant vigorous, and it is a very free bloomer. In France, it is regarded as one of the hardiest of its class, but with us it will require the experience of this winter to prove it in this respect.

Hedges and Hedge Plants.—(3rd Article.)

THE OSAGE ORANGE AND BARBERRY.

It is not necessary to advocate the Osage Orange as a hedge plant. It has probably been more extensively planted than all others, and wherever the winters are not too severe, it is one of our most valuable fence plants. In the present article we merely wish to say a word

about the young plants and seeds, to give a general answer to numerous letters of inquiry. There was a large quantity of seed sown last spring and many will lose their plants from not knowing that the first winter is usually very severe upon them—especially in ground liable to be thrown by the frost. The proper way is to take up all the seedlings when frost has checked the growth. The bed is usually mowed over, to remove the immature tops, and the plants are either plowed out, or if the quantity

best to spread it and let it ripen under cover, and after the seed is fully developed it may be allowed to freeze. The fruit is mashed in spring and the seeds are separated by washing.

THE BARBERRY is now attracting considerable attention as a hedge plant, and since the publication of an article in last June, page 213, we have inquiries about the seed. The Barberry is very abundant in New England, especially in Massachusetts and Rhode Island. The fruit is usually to be found in the markets of those

States. The seed may be separated by putting the berries in water and then allowing them to stand until softened, when they may be rubbed between the hands, and the pulp be washed away from the heavier seeds.

Scattered Treasures.

In the natural way of things the leaves decay where they fall, and thus return to the earth more of organic matter than the tree takes from it. In cultivation we do not allow things to go on in their natural way, but wish some portions of earth to be unnaturally fertile, and we accumulate manures. Besides, in our civilization we have certain ideas of neatness



MARECHAL NIEL.

is small, dug by the spade. The plants are then assorted, all of the same size put together and tied in bundles of 100. To preserve them during the winter, they may be placed in the cellar and covered with sand, sandy earth, or sawdust fresh from the mill. Anything that will keep them from drying and not be too wet, will answer. The plants may also be heeled-in out of doors, if a properly drained place be selected. Thus treated, the plants winter safely, and the assorting, which is always necessary to secure evenness in the hedge, is done more at leisure than it can be in spring. With regard to seed, in Texas and Arkansas, where the tree grows naturally, the fruit, when ripe, is thrown into heaps to rot, and the seeds are washed from the pulp. This does well enough where the season is long enough to mature the fruit on the tree. At the North there are many old hedges and trees also, that bear fruit, which, though it attains its full size, does not ripen upon the tree. With this fruit a different course must be followed. The seed must have an opportunity to perfect itself within the fruit. The fruit is in size and shape like an orange, and in structure much like an enormous round mulberry. Each seed is surrounded by fleshy envelopes, which, though the seed may be quite immature when the fruit is gathered, serve to nourish and perfect it. With the northern fruit it is therefore

with which fallen leaves conflict, and we gather them up because they have a slovenly look that offends us. Every leaf should be saved, and if not allowed to decay and enrich the ground where it falls, it should be made to do good service elsewhere. In our country towns and villages, so generally planted with shade trees, the crop of leaves is blown about and usually goes to waste. The careful gardener will be on the look out for these "scattered treasures," and gather them all for preservation. Gathering the autumn leaves is excellent work for children, and men and women need not be ashamed of it, for it is merely accepting one of the gifts of a bountiful Providence. Leaves are nature's own winter mulch for the wild flowers of the woods, and we can have nothing better for our beds and borders. For bulbs and all herbaceous plants, strawberries, and all things requiring a winter covering, the otherwise wasted leaves will be found most useful. Then when we come to make hot-beds in early spring, they serve to mix with manure in the proportion of one-fourth to one-half, and make a better heating material than manure alone. And after having served this purpose, their vitality is not exhausted. The old heating material, mixed manure and leaves, thoroughly rotted, makes a manure that every gardener knows the value of. Save the leaves then, there is money in them.

THE HOUSEHOLD.

(For other Household Items, see "Basket" pages.)

About Alkalies and Acids.

These two words occur so frequently in every day life, that a few explanations of them will be acceptable to the unscientific reader.—**ALKALIES.**—Potash and Soda are familiar examples of *alkalies*. When pure, they have a strong caustic or burning taste. They dissolve readily in water, and also unite with oil or grease. Water and oil will not unite together, but put some alkali with them and this will take hold of each and bring them together, as in making soap. The strongest and most common alkalies are Potash, Soda, and Ammonia or Hartshorn. Ammonia is a powerful alkali, but as we usually see it, it is dissolved in a large amount of water. There are other alkalies, and many alkaloids, that is, vegetable substances that have alkaline properties, such as quinia, morphia, strychnia, etc. Then there are alkaline earths, as they are called. Lime is one of these, which, when newly burned, is very caustic. Magnesia is another. Lime and magnesia, and especially lime, are useful in many cases as alkalies. As an alkali is often wanted, sometimes in haste, to neutralize an acid, as explained below, the unscientific reader will remember the five most common alkaline substances, by the initials PSALM, standing for *Potash, Soda, Ammonia, Lime, Magnesia*.

ACIDS.—The word *acid*, means *sour*, and most of the common acids are very sour to the taste. Acetic acid, or vinegar, when pure, is intensely sour, and would destroy the flesh, but good strong vinegar contains only 5 or 6 parts of acid dissolved in 100 parts of water. Sulphuric acid, commonly called "oil of vitriol," is one of the strong acids. A drop of this in a pint of water will make it taste sour. Nitric acid, called aqua-fortis, is another of the strong acids. So is hydro-chloric acid, commonly called muriatic acid, or spirit of salt. Then we have citric acid, the sour of lemon juice; malic acid, the sour of apple juice; tartaric acid, the sour in grapes and some other fruits; lactic acid, the sour formed in milk, etc., as common examples. We generally say when anything becomes sour, that it is acidified. Almost all the acids, when strong, are injurious to the flesh, and poisonous if swallowed, but when greatly diluted with water, they are frequently tonic or strengthening. Some fruits are for this reason often useful, and generally healthful, if well mashed or masticated so as to be easily digested. Vinegar is much used with some kinds of food to aid in their digestion, but too much of it injures and weakens the stomach, and it is not advisable for constant use.—*Carbonic acid* is very abundant, but we never see it alone, because when not combined with something else, it always takes a gas or air-like form. It is produced wherever any vegetable substances, as coal, wood, oil, etc., are burned. It is this acid that bubbles up in soda water, and gives it a sourish taste. It is carbonic acid that fills the little interstices or air-holes that make bread, cake, batter, etc., light. It unites with potash to form saleratus, with lime to make limestone, chalk, or marble.

The *acids and alkalies* unite together, and usually destroy each other's acid properties, forming what are termed "salts." Thus strong sulphuric acid (oil of vitriol), unites with the powerfully caustic soda, and forms the mild compound known as Glauber salts (sulphate of soda). So also when this powerful oil of vitriol which eats into the flesh, and even chars wood, is united with the intensely caustic fresh lime, the two neutralize each other's properties, and form the mild, tasteless sulphate of lime, (gypsum or Plaster,) which we sow on land, and use in making casts, cornices and ornaments on plastered walls, etc. Aqua-fortis (nitric acid), as powerful as it is to destroy the flesh, and to dissolve metals, when united with caustic lime, makes a compound as mild as plaster, and when united with potash, makes saltpetre. Soda put in acid or soured batter neutralizes the acid formed.

One practical lesson to be learned from the above, is, that when trouble results from the accidental or over use of either an acid or alkali, it is to be counteracted by applying the other. For example, if an acid is accidentally swallowed, follow it as quickly as possible with some alkali,—as a weak solution of potash or soda, or lime water. A strong solution of soap swallowed freely, is the best common remedy. The effects of potash, soda, lime, strong soap, etc., upon the hands, are neutralized by a weak wash of any acid, as acetic acid (vinegar). Acid spilled upon the garments should be quickly neutralized with potash, soda, ammonia, or lime water.

About Soap—Soap Frauds, etc.

It has been estimated that, in the United States and England, the annual consumption of soap, for domestic purposes alone, amounts to an average of 8½ lbs. of hard soap for each inhabitant, equal to 41½ lbs. to each family of five persons, and about 250,000,000 pounds for our entire country—worth fully \$3,000,000. Large quantities are also used for manufacturing purposes, as in woolen manufactories, etc. All soaps are essentially alike in their composition and action. Their principal use is to remove oily matters, which are dissolved by *alkalies*. (See notes on alkalies above.) The alkalies in a pure state are too strong for the hands, and they usually injure fabrics. They are therefore made less caustic by first combining them with some oil or grease in the form of soap. Potash united with any kind of oil or grease, makes a watery compound called "soft soap." Soda with oil or grease, forms "hard soap." If we put soda, or salt which contains the metallic element of soda, into soft soap, the soda unites with the oily material, making hard soap of it, while the potash is expelled and remains dissolved in the liquid. Ordinary good soft soap, contains in each 100 lbs., about 43 lbs. of oily matters, 9 lbs. of potash, and 48 lbs. of water. Good white hard soap, about 60 lbs. of oily matters, 7 lbs. of soda, and 33 lbs. of water. Castile soap, 75 lbs. oily matters, 10 lbs. soda, and 15 lbs. water. Other hard soaps vary from 50 to 80 lbs. of oily matters, 4½ to 10½ lbs. soda, and 8 to 45 lbs. water in each 100 pounds.

Common Domestic Soft Soap is made in two ways: Where wood is the chief fuel, the ashes supply a large amount of potash. This is obtained by leaching, that is, running water slowly through the ashes. The lye thus obtained is boiled down to any degree of strength, and oil or soap grease added at any stage of the boiling. It will boil away faster without the grease, but is in the end stronger if the grease be added at first, as less carbonic acid is absorbed from the air. For the same reason, fresh run lye, or that kept closely covered, is stronger than that much exposed to the air. So also, it is desirable to keep the lye, in its passage from the ashes, as little spread out or exposed to the air, as possible. It may not be generally known that fresh slaked lime, mixed with the ashes, a quart or two to the bushel, and especially with the ashes in the bottom of the leach, is highly beneficial. The lime withdraws the carbonic acid from the potash, and leaves a stronger lye. Lye is much improved in strength, by stirring a quart or two of fresh slaked lime into a barrelful, letting it settle, and pour off the clean lye when ready to add the grease for soap making. The amount of boiling is not essential, except to reduce the soap to a convenient consistence or thickness.—The other process, where ashes are not made at home, is to purchase potash, dissolve it in water, about a pailful to a pound, more or less, and boil it with 2 or 3 lbs. of grease—the proportions depend wholly upon the strength of the alkali, and the quality of the grease, of which sufficient is to be used to leave it weak enough not to corrode or injure the hands. If left too strongly alkaline, it will injure the fabric.—This brings us to

Bad Soaps in the Market.—There is great need of caution on the part of housekeepers, in this respect. As a rule, the "labor-saving

soaps," all those recommended as quick washers, etc., are dangerous. They are made by incorporating into them an undue amount of alkali, which, while it does promote the quick cleansing of garments, does so *at the expense of the fabric*. The washer-woman, and even the housekeeper herself, is pleased with the ease with which the dirt is cleaned out, and she will not only purchase the same soap again, but recommend it to her friends and neighbors, and even give a written certificate of its excellent properties. It is true that every time it is used, it is eating away the strength of the fine fabrics, but this is not so rapid as to be noticed from week to week. The garments wear out early, but that is charged to the manufacturer who "makes such poor material in these days." *We have no doubt that millions of dollars worth of garments are destroyed every year by these much puffed, quick washing soaps, now so extensively used!* The best recipe we could give for reducing the present high price of cotton and other goods, would be to abolish from the country everything in the form of a patented, quick-washing, labor-saving soap. If anybody wishes to persist in using something that will "wash quick," let her dissolve the common bar soap, and add a few ounces of cheap washing soda. This will get all the effect of the best labor-saving soap at a far less cost. But nothing of the kind should be used.—Never buy a soap which, on drying, leaves on the surface of the bar a white coating of soda, or other alkali. Pale bar soap, that dries smooth, is the best. That which is of a light brown, from the admixture of resin, is equally good with the white, for cotton and linen cloth, but for woolen or worsted, nothing but pale soap should be used, as the brown, resin soap is injurious. *Dark brown soap*, which contains much resin, should be rejected. Soap which shrinks ½ or ¾ in drying, is not profitable. Some manufacturers incorporate a great deal of water, which adds to the weight and bulk, but is a clear loss to the buyer.—The above remarks apply to a dozen recipes now before us, contributed by subscribers, which gives directions for making excellent quick washing soaps, costing only 2 to 4 cents the pound or gallon. Those who use them, should take into account the loss of fibre they are invariably enduring. The same remarks apply also to the thousand-and-one washing fluids, for which recipes have been sold so extensively.

Another Fraud is found in the white soft soaps sold at the grocery stores in cities and villages. They are made of a little grease and soda (instead of potash). As the soda naturally makes a hard soap, much water, together with starch flour, silicate of potash, borax, etc., are mingled to give it the jelly like consistence. All this stuff is to be avoided. We have seen it sold of so poor a character that a barrelful of it was really less valuable than 3 or 4 lbs. of bar soap. We have heard of its being made and sold at 75 cents a barrel, at a round profit to the maker. Yet the poor and ignorant buy this in immense quantities, because it is sold at a low price by the gallon, though at an exorbitant price compared with its real worth.

There are many other interesting and useful items about common soaps, toilet soaps, fancy soaps, shaving soaps, etc., which we must defer a month or two, or until we have space for them.

For the American Agriculturist.

"Above Half Right."

"Above half right, above half right," exclaimed Mr. Marvin, at the close of a long reverie, as he sat by the kitchen stove.

"What is above half right?" asked his trim little wife, who was just entering to call him to tea.

"Oh, no matter, Fanny, but I am glad if tea is ready—the chill has gone, *outside*, and that will set me all right within."

"But I insist upon knowing to what that oracular conclusion referred," said Fanny, playfully intercepting her husband's way to the dining room.

Now with the bright face of his wife, and the pleasant prospect of supper before him, Mr. Mar-

vin would rather have been excused from telling his previous cogitations; but Fanny "insisted."

"Pour me a cup, then, and if you are willing to risk a spoiled supper, you shall know."

"What is the mystery?" said Fanny, as she passed the fragrant cup of tea to her husband.

"No mystery at all. I was only drawing a comparison, as I sat by the kitchen fire, between Tom Hughes' home, manner of living, in fact house-keeping arrangements generally, and our own."

"And who is 'above half right?'" asked Fanny quickly—"surely not Tom and Clara—everything at loose ends—perfect carelessness, not to call it slackness, stamped on everything, out of doors and in. Such a yard and garden! Sweet flowers, to be sure, but overrun with weeds—walks neglected—borders broken, or altogether lost; and *inside*, oh! dear, I could never describe it!"

"I know! I know! But comfort is what I was looking at, Fanny, *comfort*!" And Mr. Marvin laughed in spite of himself, at Fanny's blank look.

"More confusion than comfort, I should say!"

"Well, it's all as one feels about it. Too much precision is apt to be chilling;" and visions of linen-cased chairs and ottomans, gauze-covered pictures, and darkened windows in his own perfectly kept parlors, would rise up in contrast with the pleasant freedom of his friends' less pretentious and more commonly used rooms.

"Oh, you got wet to-night, and because I didn't rush, as Clara would have done, and hurry you into the parlor, wet boots, dripping coat, umbrella and all, to ruin the carpet and marble hearth, you sat and had all these fancies over the kitchen fire."

"Fanny!" and Mr. Marvin's voice assumed a harsher tone than usual, "you *would* know my thoughts—a man isn't responsible to his wife for having them, I take it; so don't be offended if I revealed them at your own request. I believe I love neatness and order as well as any man, but I do not love to be cramped and hampered at every turn, afraid to step here, or sit there. A little more use and a little less ceremony, a little more wear and tear, and a little less formality, wouldn't it seem more homelike, Fanny?"

"This 'letting down' of things I never could bear," was the quick reply. "Now tell me, candidly, Edward, would you be willing I should let Alice and Arthur bring their blocks and dominoes into the parlor, to build forts and railroads with, on the carpet, or let Susie have her dolls and tea-set there; or thump over the piano-keys with her merciless, fat fingers for the sake of a perfect jargon of noise, instead of keeping them in the nursery, and allowing them only to come in the parlor when properly dressed and at suitable times?"

"Candidly, yes; I would really like it! Dear little things, let them be happy in *every* room and any room, and not have a parlor seem to them, as Sunday used to seem to me. I should not give them an inkstand, uncoiled, to play with, nor allow rude games, nor have them make the piano a 'stamping ground;' but anything short of this, which could afford pleasure, let them enjoy."

"And what a beautiful noise there would be when the door-bell should ring—bustling about putting back chairs from Arthur's train of ears, and stopping to shake him into quiet because he cried that his train was ruined, picking up this, and straightening out that, until you meet your friend with a face flushed to fever heat, and a hearty wish that parlors might never be nurseries."

Edward laughed; and Fanny, unappeased, went on "And would you have the blinds open all day, and the sunshine in, spoiling everything?"

"Rather brightening and sweetening everything."

"And the covers off the furniture, and all worn and threadbare in a month! Only yesterday Clara was darning a place in her sofa, where copper toes and high heels no doubt often came down with sufficient force to please the greatest advocate of freedom and unrestrained use! And then you would like such a garden as Tom's! Faded pea-vines, clinging to the dead brush, and Dahlias blooming from out the tangled mass. Roses and Spearmint, Asters and Asparagus growing in lover-like proximity—while the walks are gracefully arched with

strong weeds, lacing themselves across the way in a very free and easy manner!"

Mr. Marvin laughed again in spite of himself, as he thought of his own carefully kept yard and garden, where one weed would be plucked up as an intruder, where not a dock or dandelion, or presuming plantain had for years dared to lift their heads, and where every walk was as precisely straight (since Fanny had been the mistress, at least) as the line that divided the glossy tresses of his wife's hair. On the whole, he had grown very fond of order; but there were times when his soul felt trammelled, and in his rebellion he felt disposed to knock around, overset, and break up stiffness out doors and in, with a vengeance!

"No! Fanny, I would never have broken borders and weed arches, nor sofas turned into a playground; but I would have less fear of a little use, and more open, sunny, genial freedom. I would rather bequeath to my great-grand-children worn furniture, threadbare carpets, and tarnished silver, than portraits wrinkled into railroad-maps, from care-lines made by the constant strain to keep these things fresh, whole, and bright. There are always extremes in everything. I would have only a pleasant mean. If I had but one room below and one above, with a four feet wide yard in front, I would not, like poor Sam Wilt, have melon rinds and refuse apples, broken glass and bits of earthenware, occupying half the space, and broken chairs and useless traps filling every inch within. No, I would show that a little room could be made comfortable, and at all hazards homelike."

"Well, you are 'above half right,'" said the willful little Fanny, "and you'll see if I don't prove it!"

And sure enough Mr. Marvin found, in less than a week, a sun-lighted parlor, with unceased furniture; and actually heard from its cheerful recesses the merry voices of children who are ever the first to appreciate the blessedness of a true home. Fanny had "a mind of her own," but she was proud to yield gracefully when convinced that her husband was "above half right."

Original Contributions to the American Agriculturist.

Hints on Cooking, etc.

Moravian Recipes.—(Rev. E. E. Reinkle, Pastor of the Moravian Church at Olney, Ill., writes a very pleasant letter to the *Agriculturist* and its work, which it would be gratifying to print, had we room for one in a thousand of such agreeable epistles. Wishing to make a return for good received, and contribute what he can to the general good, he sends a variety of well tried recipes, in use mainly if not only in Moravian communities. We shall print them as we have room from time to time. First we select the following four:)

Excellent Stock Yeast (which will keep six months, if hung up in a bag in the air:). In $\frac{1}{2}$ pint water, boil for 5 minutes a handful (about a gill,) of good hops. Strain this still boiling hot over a pint of flour into which there has just been grated a raw potato the size of an egg. After standing until just lukewarm, stir into it a teacupful of good yeast or of dissolved leaven kept over from the last baking, or of "rivels" dissolved by soaking in cold water. Allow it to rise twice, stirring it down each time. This will require 2 to 3 hours. Now take flour, or better, equal parts of corn meal and flour, and with the hands rub in enough to work the whole mixture into quite dry fragments. (These are known in old fashioned cookery as "rivels.") Spread these bits, or rivels, thinly on cloths laid on trays or boards, and leave them to dry—occasionally turning them over with the hands. These dry much sooner than yeast cakes, and are less apt to sour. In baking bread, use a small teacupful of the rivels to each 4 quarts of flour.

To make Yeast at First (without stock of any kind to start with). Take 1 tablespoonful of molasses—thin, raw New Orleans molasses is best—1 tablespoonful of flour, and 1 tablespoonful of water. Mix and allow it to stand a day or more in a warm place, near but not on the stove, until it ferments. Then use this with the hop water flour, and potato dissolved, as above, for "Stock Yeast," and go on and make up the rivels with flour and meal as there described. You will thereafter have some yeast, or rivels, to start with. This recipe will be invaluable where no yeast of any kind can be had to begin with.

Good Home-made Bread—(Note all the particulars). Take 4 quarts of good flour. Scald

one teacupful of it with boiling water, and then mix with it a teacupful of the "rivels," or stock yeast, above described, and previously dissolved in cold water. When cool add 1 pint more of the flour and a little lukewarm water to make a batter or "sponge." When this is well leavened (in about 2 hours), add the rest of the flour, and 2 heaping tablespoonfuls of salt, and lukewarm water enough to form the dough. Knead thoroughly, 10 to 15 minutes, according to the strength applied, and allow it to stand about 2 hours, or until "light." Make into 4 loaves, merely rounding without kneading the dough. Put the loaves into tin pans, or straw baskets, and let them rise again about 1 hour to recover any shrinking in handling; then bake in a moderately heated oven so as not to scorch the top.—To test a hot oven, throw in a little flour, and if too hot it will scorch the flour to a crisp immediately. The teacupful of scalded flour, put at first with the rivels or yeast, makes the crust both soft and tenacious. . . . **To Keep Bread** well where there is no cellar, wrap it in a clean towel as soon as cooled, and put it in a tin box, or in a large covered tin pan; or, better still in the top of a refrigerator if you have one. . . . **For Bread in Winter**, proceed as above, but instead of rivels, use a teacupful of sponge from the last baking, kept covered during the interval; and in scalding the first teacupful of flour, use water in which a pinch of hops (with 3 fingers) has first been boiled. This will make the leaven very active.

Fine "Christmas Cakes."—[Good for "Thanksgiving," and all other times.] Will keep for months in winter, and for weeks in summer if put in a tightly covered tin pan as soon as cold: Take 1 quart molasses (good, thick, dark syrup, New Orleans molasses will not answer at all), 1 lb brown sugar, $\frac{1}{2}$ lb. lard, $\frac{1}{2}$ lb. butter, and dissolve all together on a stove, stirring well.—We always add exactly 2 grated nutmegs, 1 oz. ground cloves, 1 ounce ground cinnamon (thin bark), and $\frac{1}{2}$ ounce mace, stirring all well together. Some add a little ginger, allspice, or orange peel, or use less of the other spices named. Stir in well, flour until the dough is stiff. Now let it stand over night at least. Keeping 4 or 5 days if not convenient to bake all at once, will not injure, but rather improve it. Roll about $\frac{1}{4}$ inch thick, and cut out into any shapes desired, with a tumbler, cake jagger, or fancy tin moulds. Grease the baking tins well.

Snow in Fritters—Why?—Make a rather thick batter of flour, milk, and a little salt. Add for each pint of milk used, a teacupful of newly fallen snow, and at once drop the batter into fat previously made hot. Eat with sugar, flavored with lemon juice. (These directions have come so often, and from so many different sources, that there seems to be something in them, though one would suppose the pure snow could be no better than an equivalent of water. Probably the air carried in by the porous snow and distributed all through the cold batter by stirring, is retained sufficiently to produce lightness, as the hot fat instantly crusts over the outside. This looks plausible, and the recipe can be easily tried when the snow comes. Success will depend upon having the fat ready hot, and cooking before millions of little air bubbles can unite and escape.)

Thanksgiving Pudding.—Take $2\frac{1}{4}$ quarts of milk, 4 crackers, 4 eggs, $\frac{1}{2}$ lb. butter, 4 table. spoonfuls of sugar, $1\frac{1}{2}$ teacupfuls of raisins, and spice to the taste. Bake $1\frac{1}{2}$ hours with a moderate fire.—Mrs. E. H. Randall, Worcester, Mass.

Molasses Cake—Soft Ginger Cake.—**Molasses Cake:** $\frac{1}{2}$ cup cream, $\frac{1}{2}$ cup sour milk, 1 cup molasses, 1 teaspoon saleratus, 1 tablespoon ginger, or other flavoring, a little salt and flour to make the whole rather soft. It is light and good.—**Soft Ginger Cake:** 1 cup sweet milk, 1 cup molasses, 1 tablespoon butter or melted lard, 1 teaspoon salt, 1 teaspoon soda, 2 teaspoonfuls cream of tartar, flavor with ginger or any other spice.—Mrs. M. Ingalls, Muscatine, Iowa.

The Cheap Cake Frosting, to be made with corn starch thickened with pulverized sugar, which came recommended by a subscriber, and is published in some other journals, we have tried and it did not work well. It would not thicken up enough.

Drop Cakes.—1 cup sour cream, 1 cup butter, 2 cups sugar, 4 beaten eggs, $\frac{1}{2}$ teaspoonful soda, spice to taste, and flour enough to make it stiff enough to drop from the spoon.—Mrs. Samuel P. May.

Bread Griddle Cakes.—(Good way to use stale bread:). Crumb the bread and add sour milk enough to soften it, and let it stand over night. Then mash fine with a spoon, add a beaten egg and a teaspoonful of soda for each quart, with flour enough to make the batter considerable thicker than for common griddle cakes.—As fast as baked, put on a plate over a basin of hot water, covering them closely with a large bowl or other dish. This keeps them warm and moist.—Miranda.

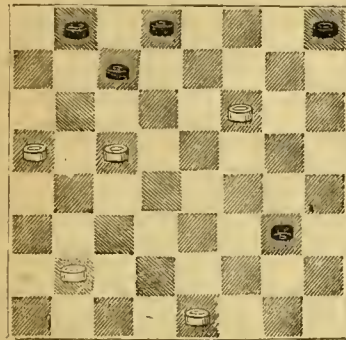
BOYS & GIRLS' COLUMNS.

Premiums for Boys and Girls.

We remind our young readers that the extensive list of Premiums, fully described last month, and noticed elsewhere in this number, contains many things within the easy reach of boys and girls of all ages. Hundreds of our young friends have in the past years raised clubs of subscribers and secured the great Dictionary, the gold pens, mathematical instruments, books, volumes of the *Agriculturist*, etc., etc., for themselves, and very often they have singly, and sometimes by a few uniting their efforts, obtained Sewing Machines and other articles for widows of soldiers and others. School rooms have been supplied with Melodeons and Barometers, by the canvassing of the scholars. Our business letters contain accounts of many pleasant enterprises of this kind. There is always a public sympathy in such efforts, and multitudes of persons subscribe to help on the enterprise when they wouldn't otherwise do so, and in the end they themselves are benefited by being led to read more. We expect to hear of a great many such cases among our half a million of young friends this year. It only needs some enterprising youth to start the scheme in each town.

The Game of Checkers or Draughts.

POSITION NO. 9.—Black to play and win.
Black.



White.

GAME NO. 3.—SUTER OPENING. (*)
(Position 8, page 366, October *Agriculturist*.)

Black.	White.	Black.	White.
1—11 to 15	23 to 19	20—25 to 29(h)	(i) 26 to 23
2—9 " 14	22 " 17	21—8 " 11	23 " 18
3—6 " 9	(a) 17 " 13	22—5 " 9	14 " 5
4—2 " 6	25 " 22	23—7 " 10	5 " 1
5—8 " 11	29 " 25	24—10 " 15	18 " 14
6—4 " 8	b) 24 " 20	25—15 " 19	1 " 6
7—15 " 24	28 " 19	26—19 " 24	6 " 10
8—11 " 15	27 " 24	27—24 " 22	14 " 9
9—14 " 17	21 " 14	28—28 " 32	2 " 6
10—9 " 18	(c) 26 " 23	29—32 " 27	6 " 2
11—18 " 27	32 " 30	30—27 " 23	2 " 6
12—10 " 14(d)	19 " 10	31—23 " 19	6 " 9
13—6 " 15	(e) 13 " 9	32—19 " 23	9 " 14
14—14 " 18(f)	23 " 14	33—23 " 19	14 " 18
15—7 " 11	31 " 26	34—12 " 16	10 " 7
16—3 " 7	25 " 21	35—19 " 15	18 " 22
17—15 " 19(g)	24 " 15	36—15 " 19	7 " 3
18—11 " 25	9 " 6	37—19 " 15	3 " 8
19—1 " 17	21 " 14	38—White wins.	

(*) Suter, Scotch—signifying Shoemaker. Is so called from its being the favorite opening of an old Paisley player of that craft. It is formed by the first five moves. (a) 27 to 23, draws. (b) 26 to 23, draws. (c) 31 to 27, draws. (d) 15 to 18, White wins. (e) 23 to 19, Black wins. (f) 7 to 11, draws. (g) 12 to 16, White wins. (h) the losing move. 8 to 11 draws, (i) Position No. 8.

A Debt not Easily Paid.

If we possessed nothing more than what had been gained by our own efforts, we should be poor indeed. Taking no account of the good things with which God has filled the earth for the use of man—the sunshine, clouds, fruitful fields, teeming waters, healthful air, and all the innumerable expressions of His bounty in nature—every man, woman, and child, are debtors to the skill and industry of our fellows. Our clothing, food, books, amusements, tools, in short, every thing devised for comfort or happiness, require an amount of thought and work, which no one individual could ever accomplish. It has required ages of experiment and labor to perfect even the commonest articles of every day use. A boy's coat represents the toil of the shepherd, who raised the wool; the genius of the inventor who devised the machinery for cleansing, carding, spinning and weaving it; the art of the chemist who prepared the dyes; labor of those who did their part in furnishing the thread and buttons; the work of the tailor; the skill of the hundreds of mechanics who constructed the tools necessary for all those who had a hand in completing the garment, and the efforts of those who furnished food for all thus engaged;

why almost half the world had some thing to do toward making that coat; and thus it is with nearly all the things we possess. Now no one man can ever really pay for all he has received. When any one feels like "putting on airs," exulting himself, and boasting of his independence, it may benefit him to think that his debts are not yet paid, that they never can be. The best one can do under the circumstances is to exert himself to add something to the general stock of good things in the world. The Good Book sums it up in this wonderful sentence: *Owe no man anything, but to love one another*—showing that the debt of good will can never be fully discharged.

Dog Stories.

A friend in Brooklyn relates that the family dog, Jip by name, being a great favorite, was generally invited to be present at lunch time, and was well remembered with occasional tit-bits. One day one of the family did not return from a shopping excursion until after lunch had been served. She had not long been seated at home, when Jip, who had at first saluted her, left the room, and presently returned with a piece of bread in his mouth, which he laid in the young lady's lap. She threw it aside, but the dog immediately returned it to her. She was about to chide him for his annoyance, when it occurred to her that the dog had probably noticed her absence from the table, and was now doing his best to make amends for it. Of course, after that, Jip was in higher favor than ever. Many incidents seem to prove that dogs sometimes understand much that is said to them. An English gentleman relates that his gamekeeper would send his dog from the field with orders to bring him a certain boll, say No. 4, and the dog would receive no other from the servant but the number ordered. Many cases have occurred where dogs have attached themselves to companies of men, instead of any particular owner, and become part of the organization. One such belongs now to a fire engine company in New York. At the first tap of the bell he is on the alert, and "runs with the machine" with as much apparent interest as the most veteran fireman. We have often seen him thus passing our office. A dog formerly belonging to one of the companies of this city saved the lives of several children by rushing through the fire and dragging them out. A dog named Monstace was attached to the French army during the wars of Napoleon, where he rendered many important services. One night a party of Austrians were advancing secretly to the attack, but Monstace smelt them out, aroused the guard, and the enemy finding themselves discovered, retired. For this he was duly enrolled as a member of a regiment, and received the daily rations of a grenadier. During a fight, he would bark incessantly at the enemy, and make a charge when he saw a good opportunity. One day he discovered a dog in the opposite ranks, and attacking him furiously, after a hard struggle, gave him a severe drubbing, though he came out of the combat with the loss of an ear. On another occasion a spy entered the army unsuspected, as he spoke the French language perfectly; but Monstace no sooner scented him than he seized him by the leg, barking fiercely. This led to an examination and the detection of the spy, who forfeited his life. In the famous battle of Austerlitz, a standard bearer was set upon by nine or ten Austrians, Monstace came to his aid, and after a desperate struggle in which three of the Austrians were slain, the standard bearer fell, with his flag wrapped around his body. Those remaining tried to tear it away, but just then a discharge of grape shot swept them away, and also took off one of Monstace's paws; but the brave dog seized the flag with his teeth, tore it loose and bore it to the camp. For this exploit he was decorated with a red ribbon and a medal, with the inscription, "He lost his leg at Austerlitz, and saved the flag of his regiment." He was finally killed in battle by a cannon ball, and buried on the field. A stone was erected at his grave with the epitaph "Here lies the brave Monstace."

Impracticable Inventions.

It is related of Brunell, the great English engineer and inventor, that he was much annoyed by unpractical and ignorant men, who solicited his attention to projects often of the most absurd kind. On one occasion an Irish gentleman submitted to him a design for a kind of hood to a carriage, the merit of which was said to be that in fine weather it could hang under the vehicle ready for instant use in case of a sudden storm. "Impossible," exclaimed Brunell, "such a mass could never be stowed away in so small a space."—"Do you think so?" said the visitor, not at all taken aback. "Ah! then we will soon get over that difficulty. The thing must be left at home in fine weather; shan't want it then you know!"—On another occasion his benevolence was appealed to, that he might examine a new means of sweeping chimneys. At that time small boys were employed to climb up through the flues, from which they suffered great dis-

comfort and no little danger, besides being injured by the unhealthfulness of their hard occupation. The proposed plan was extremely simple; a broom was to be worked from above as well as below, and thus every nook was to be easily swept out.—"Very good," said Brunell, "but you have not yet told me how the rope is to be got up to the top."—"Nothing more simple," said the sanguine inventor; "of course a boy will go up the chimney with it at first!"

Answers to Problems and Puzzles.

The following are answers to the Puzzles, etc., in the October number, page 367. *Comical Picture*.—Two donkeys, besides the seven donkey-like faces, may be found in the picture, by turning it upside down, and side-wise....No. 229. *Mathematical Problem*.—Corn, 10 acres; Wheat, 12 acres; Oats, 40 acres; Potatoes, 20 acres; Corn, 63 bushels per acre; Wheat, 22 bushels; Oats, 27 bushels; Potatoes, 129 bushels.....No. 230. *Illustrated Rebus*.—It is up-hill work uniting two hearts with a mis-understanding between them....No. 231. *Mathematical Problem*.—The man makes five dollars....No. 232. *Illustrated Rebus*.—We've here on hand together brought, On behalf of every one: Rebus, acrostic, merry thought, Conundrum, essay, pun, And all the tricks in every style, To make our little readers smile....No. 218, July number, page 263. *Prize Problem*.—By an error, the answer to this was given in the September number as 13,918 1438. It should have been 13,968 1603 1739.

The following have sent in correct answers: F. W. Kleinschmidt, Robinswood, Fidelia R. Lord, Daniel Frohman, T. J. Bowerman, Charlie Frohman.

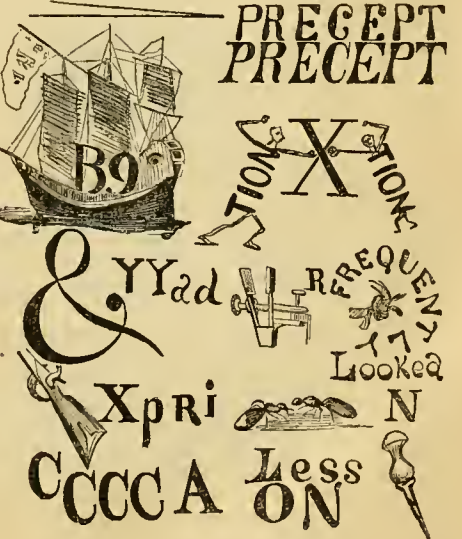
New Puzzles to be Answered.



No. 233. *Illustrated Word*.—Needed to read the puzzle. No. 234. *Mathematical Problem*.—What length of wire 1-10th of an inch in diameter, can be made from a solid foot of copper? No. 235. *Mathematical Problem*.—Two men agreed to build the part of the gable end of a brick house between the rafters. The house was 18 feet wide, and from the ridge pole to the center of the end plate, was 20 feet. How many feet in perpendicular height shall the first build to complete his half?



No. 236. *Illustrated Word*.—Endeavor to do it plain. No. 237. *Grammatical Puzzle*.—To which nouns do the pronouns in the following sentence refer. "An ad-vowson presentative is where the patron hath a right of presentation to the bishop or ordinary, and moreover to demand of him to institute his clerk, if he finds him canonically inclined." This ought to be very clear, as it is a passage from Blackstone's Commentaries, a book on law; but the pronouns make it very muddy.



No. 238. *Illustrated Rebus*.—A very obvious truth.



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A STRANGER IN THE FAMILY.—FROM A PAINTING BY WM. BEARD.—Engraved for the American Agriculturist.

This lively little guinea pig, in his wanderings, has made his way into a private family circle, where his reception is somewhat doubtful. The different kittens are prepared to entertain him, each according to its own disposition. One lifts a spiteful paw for a scratch at his nose; another sees a chance for a game of romps with the new comer, and is ready for the first spring; while another is rather shy of the stranger, and waits to see how he will conduct himself. One little fellow thinks more of his dinner than of any thing else, and makes good use of his opportunities while the rest are busy otherwise. The old cat seems willing that her young should make a new acquaintance, but she keeps a watchful eye on the stranger, ready to pounce upon him, should he prove dangerous or troublesome. It is a charming family scene, full of life, and shows the real genius of the artist, Mr. Wm. Beard, of New York, whose animal paintings tell their own story without any description.

"Lift a Little."

This is the singular title of a little book published by the Boston Tract Society, which we have just been reading, and which every boy and girl in the land would find interesting and profitable. It tells of a number of girls who formed a society called the "Burden Bearers." They were each pledged to try and do something to help those around them, to lighten their burdens, and their excellent motto was "Lift a little." Once a week they met and related their successes. One little girl had risen an hour earlier in the morning and taken care of a fretful baby, so that her mother could get a little rest after being disturbed by the crying child during the night; another had tried to keep from making unnecessary noises with hands and feet, which she had a habit of doing, and thus disturbing the household; a third had endeavored to keep a playmate from whispering in school time and annoying her teacher, and thus in many ways they "lifted a little" of the care and weariness from their friends and neighbors. Such an excellent sugges-

tion should have the widest possible circulation, and we therefore recommend the plan to the half million or more young readers of the *Agriculturist*. The boys as well as girls can easily find many ways to "lift a little." Many of those gray hairs and lengthening wrinkles which you may see changing the features of father and mother, are marks made by little cares and troubles, many of which might be prevented by thoughtful children. Few persons are called upon to perform a great deed, but it will be just as noble to abound in "little acts of kindness." Begin to-day to do your part and try to "lift a little."

Plenty of Oysters.

From the immense quantities of oysters consumed every year, one might fear that the supply of these delicious shell fish would finally become exhausted. There is little prospect of this, however, as will appear from the following fact. At an exhibition recently given at the London University College, a portion of oyster spawn, (eggs), was exhibited under a magnifying glass, which by calculation showed that a single oyster would produce 1,200,000 young. Should these all come to maturity they would fill 1,200 barrels. If nothing hindered this rapid propagation, the ocean must in a few years be too small to contain the oysters alone. But there are myriads of other hungry inhabitants of the sea which feed upon the oyster spawn; other larger creatures eat them, and so by multiplying and eating, and being eaten in turn, there is food enough for all, man included, and the proper balance of inhabitants in ocean and on land is kept up.

About Snakes.

A young correspondent sends to the *Agriculturist* Office the skin of a snake's egg (they have no shells), with an account of finding a whole nest full, 36 in all, while plowing by the road side. That snakes are produced from eggs may be new to some of our young readers. Our correspondent writes that when the eggs were broken,

there crawled from each a lively little snake, about ten inches long, and nearly as large around as a common lead pencil. Although entire strangers in the world, they seemed to know very well how to take care of themselves, as they would raise their heads and dart out their tongues in a very threatening manner when molested. They were of the common striped variety, and we hope they were left to go on their way and do good. "A snake do good!" many are ready to exclaim. "Ugh! I always kill them when I find them."—Well, that is because you have never become acquainted with them and learned their habits. They live mostly on worms and insects, occasionally taking in a frog that comes in their way, and never injure any person. Surely that ought at least to entitle them to live. The rattlesnake, adder, and other poisonous reptiles are, of course, outcasts, to be destroyed at sight; but the common small snakes found on most farms in this country earn their right to live there. Even the dreaded black snake would rather run than fight, and need not be feared. We would not advise to make pets of them, but would not have children suffer by being foolishly afraid of such harmless creatures.

The Floating Grindstone.

The following is said to have occurred among some simple fishermen on the English coast. A party were gathered together on a rocky promontory just toward dark, to see a wonder, a *floating grindstone*. As such things were quite valuable in those days, a boat was soon manned and away they went, the mover of the expedition being in the bow of the boat. As they approached the grindstone, this man planted his foot on the edge of the boat ready for a spring. Presently he cried out "All my own, and none for nobody," and sprang off upon the grindstone. Lo! to his great surprise he sank under water, and presently came popping up again, with his head within the charmed circle, to be greeted with roars of laughter. He had leaped into a sheet of sea foam, which had gathered within a large hoop.

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[American Agriculturist, Jan. 1865.]

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Your extra vines truly gave an extra performance. The cuttings taken from them paid the cost of vines the first season. The second paid a handsome income; and this season they are of much greater value by the increased quantity. Hartford, Conn., Sept. 26, 1866. C. M. BEACH.

NYACK, N. Y. Sept. 28, 1866.

Dr. GRANT:

DEAR SIR: I take pleasure in informing you of the condition of my vines and my success the present season. My old vineyard is of Isabella and not satisfactorily profitable. My new vineyard was planted mostly with Concord, Iona, and Delaware in May, 1861. All have done well, but the result

with the Iona has been most gratifying.

The Ionas have grown as rapidly as the Concord, and produced an abundant crop of the best fruit I have ever tasted. Many of the bunches were each as large as your engraving, which I had before considered a misrepresentation. One bunch I laid down over the engraving covered every part of it. My Concord averaged between five and six pounds per vine, and the fruit brought 18 cents; my Delaware, five pounds per vine at 25 cents; your justly favorite Iona from five to six pounds per vine, which I sold at \$1 per pound.

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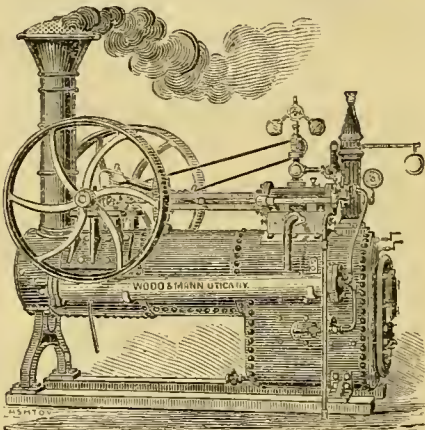
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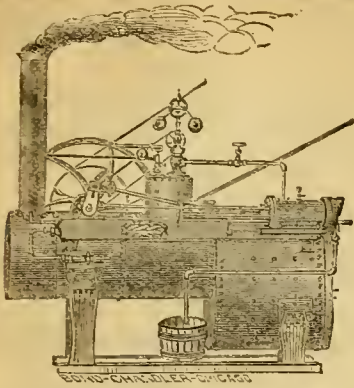
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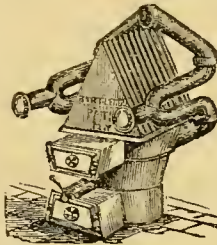
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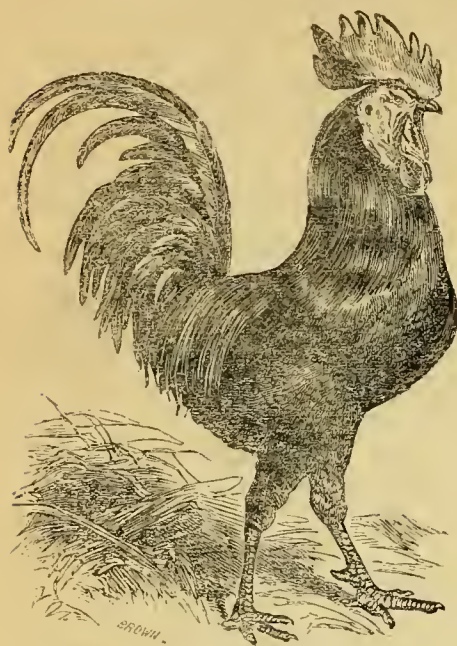
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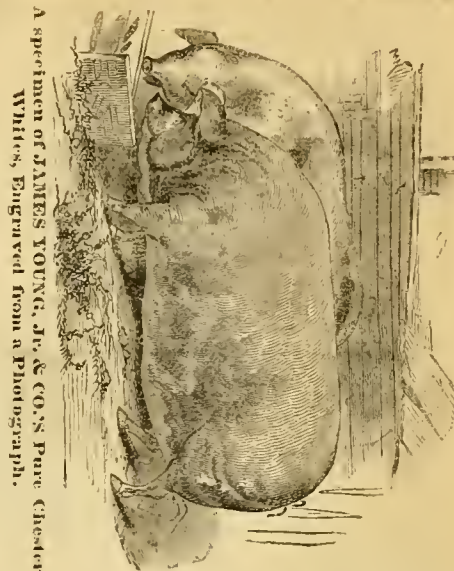
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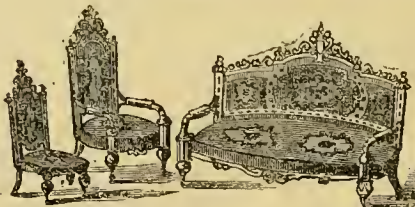
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Commercial Matters—Market Prices.

The following condensed, comprehensive tables, carefully prepared specially for the *American Agriculturist*, show at a glance the transactions for a month, ending Oct. 15, 1866, and the exports of Breadstuffs from this port thus far, since January 1:

1. TRANSACTIONS AT THE NEW-YORK MARKETS.

RECEIPTS.	Flour.	Wheat.	Corn.	Rye.	Barley.	Oats.
20 days this month.	288,000	519,000	1,101,000	136,000	341,000	847,000
20 days last month.	237,000	438,000	833,000	111,000	195,000	1,284,000

SALES.	Flour.	Wheat.	Corn.	Rye.	Barley.	Oats.
20 days this month.	329,000	754,000	1,727,000	237,000	23,800	
20 days last month.	279,100	736,000	3,153,000	319,000	11,000	

2. Comparison with same period at this time last year.

RECEIPTS.	Flour.	Wheat.	Corn.	Rye.	Barley.	Oats.
20 days 1865.	357,000	411,000	2,779,000	64,000	639,000	957,000

SALES.	Flour.	Wheat.	Corn.	Rye.	Barley.	Oats.
20 days 1865.	329,100	754,000	1,727,000	237,000	23,800	
24 days 1865.	367,000	1,784,000	1,851,000	63,000	383,000	

3. Exports from New-York, January 1 to Oct. 13:

	Flour.	Wheat.	Corn.	Rye.	Oats.
1866.	70,935	311,125	10,012,701	192,180	1,001,241
1865.	1,068,289	1,768,893	2,259,000	170,094	65,731
1864.	1,668,915	11,532,792	789,397	483	37,795
1863.	2,896,767	12,982,582	7,114,704	415,249	117,399
1862.	2,416,375	19,097,573	9,778,102	1,016,017	153,631

4. Receipts of Breadstuffs at the head of tide water at Albany, from the commencement of Navigation to Oct. 7.

	Flour.	Wheat.	Corn.	Rye.	Barley.	Oats.
1866.	128,000	2,418,100	20,117,000	713,000	557,500	6,835,500
1865.	519,000	5,913,000	10,323,200	548,100	1,049,000	6,714,500
1864.	713,000	12,038,300	7,869,100	271,700	388,000	6,493,900
1863.	891,900	13,017,900	18,985,500	301,600	648,700	5,908,500

CURRENT WHOLESALE PRICES.

	Sept. 15.	Oct. 15.
PRICE OF GOLD.	145 1/2	153 1/2
Flour—Super to Extra State	\$6 00	\$6 11 75
Super to Extra Southern.	11 30	@ 16 00
Extra Western	7 10	@ 16 00
Extra Genesee	11 75	@ 13 75
Superfine Western	6 00	@ 8 75
RYE FLOUR	5 30	@ 6 50
CORN MEAL	4 10	@ 4 85
WHEAT—All kinds of White.	2 50	@ 3 15
All kinds of Red and Amber.	1 50	@ 2 72
CORN—Yellow	85	@
Mixed	83	@ 85
OATS—Western	45	@ 55
State	55	@
RYE	85	@ 1 20
BARLEY	1 20	@
HAY—Bale @ 100 lb.	75	@ 1 25
Loose	80	@ 1 25
STRAW—@ 100 lb.	50	@ 1 00
COTTON—Balt. @ 50 lb.	35	@ 26
HOPS—Crop of 1866, @ lb.	45	@
FEATHERS—Live Geese, @ lb.	25	@ 85
SEED—Clover, @ bushel	11	@ 12 1/2
Timothy, @ bushel	3 75	@ 4 75
Flax, @ bushel	3 65	@ 3 85
SUGAR—Brown, @ lb.	4 1/2	@ 13 1/2
MOLASSES—Cuba, @ gal.	40	@ 45
COFFEE—Rio, (Gold price) @ lb.	16 1/2	@ 17
Tobacco, Kentucky, &c., @ lb.	5 1/2	@ 5 1/2
Seed Leaf, @ lb.	5	@ 43
Wool—Domestic Fleeces, @ lb.	35	@ 75
Domestic, pulled, @ lb.	25	@ 55
Carolina, unwashed, @ lb.	15	@ 42
TALLOW, @ lb.	12 1/2	@ 12 1/2
OIL CAKE—@ ton	51 00	@ 56 00
PORK—Mess, @ barrel	31 00	@ 33 25
Prime, @ barrel	30 00	@
BEEF—Plain mess, @ barrel	11 00	@ 12 00
LARD, in barrels, @ lb.	17 1/2	@ 20
BUTTER—Western, @ lb.	20	@ 23
State, @ lb.	30	@ 18
CHEESE	5	@ 17 1/2
BEANS—@ bushel	1 80	@ 2 15
PEAS—Canada, @ bushel	1 20	@ 1 30
EGGS—Fresh, @ dozen	24	@ 27
POTTERY—Fowls, @ lb.	23	@ 24
Turkeys, @ lb.	22	@ 20
POTATOES—Mercers, @ bbl.	2 00	@ 2 15
Peach Blows, @ barrel	—	@ 2 25
POTATOES—Buckeye, @ bbl.	1 50	@ 1 75
APPLES—@ barrel	3 00	@ 5 00
PEARS, @ barrel	3 00	@ 12 00

The rise in gold has been very marked since our last, influencing all commercial values, favorably for sellers. Breadstuffs have been in active demand, partly on speculative account, and prices have rapidly improved. Receipts have been moderate. Crop accounts from the interior have been discouraging. Toward the close, holders of flour, wheat, and barley seemed more eager to realize, and the market became depressed. Corn, rye and oats, however, continued in lively request at advancing rates. There has been comparatively little doing for export, as shippers have not been prepared to pay ask-

ing figures.... Cotton has been quite briskly sought after, by spinners and speculators, and prices have advanced materially, closing buoyantly, under favorable telegraphic news from Liverpool. According to the official annual exhibit of the cotton trade of the United States, for the year ending Sept. 1, 1866, the total receipts at all the shipping ports of the United States, were 2,151,013 bales, against 3,656,086 bales in 1860-'61: total exports, 1,554,664 bales, against 3,127,565 bales in 1860-'61; total taken for home consumption, etc., 667,292 bales, against 813,740 bales in 1860-'61. The total receipts at all the shipping ports from May 1, 1865, to Sept. 1, 1866, were 2,571,043 bales.... Provisions have been less freely dealt in, especially by speculative buyers, and the tendency of prices has been downward.... Wool has been in very moderate demand at declining rates, influenced by the liberal receipts and accumulating supplies of domestic.... Tobacco has been in fair request at steady figures.... Hay, hops and clover seed have been decidedly more active and buoyant in price.... One year old broom corn has been in moderate supply and limited demand at 6c. @ 10c. per lb. for fair to good. The new crop has not yet begun to arrive freely.

New York Live Stock Markets.

The supply during the past five weeks has been very good for the season, as is shown in the following table:

WEEK ENDING.	Bees.	Cows.	Calves.	Sheep.	Swine.
Oct. 16.	6,824	98	1,234	25,176	19,458
Oct. 9.	6,315	79	1,301	27,211	15,127
Oct. 2.	6,448	72	1,083	25,411	14,494
Sept. 25.	8,034	112	1,629	23,710	10,719
Sept. 18.	6,315	112	1,456	26,082	12,031
Total per Month.	33,966	511	7,995	127,573	71,631
Average per Week.	6,793	102	1,597	25,514	14,326
do. do. last Month.	6,227	93	1,309	23,300	11,968
do. do. prev's Month.	5,300	111	1,116	18,018	7,240
do. do. 1865.	5,255	118	1,580	16,021	11,023
do. do. 1864.	5,361	115	1,511	15,315	12,676
do. do. 1863.	5,150	129	691	9,911	21,670

The weekly receipts of all kinds of animals have advanced considerably upon the previous month. As shown above, the weekly increase in cattle is 566 head. The average weekly receipts, 6,793, compare with 5,257 the weekly average for all of 1865, or an increase of 1,536, equivalent to 256 for each day, Sundays excepted....

Beef Cattle. Under the very large receipts noted above, have gradually declined in price, with not very good present indications for a recovery. The sales at the last regular market were at rates equivalent to 17c. @ 17 1/2c. per lb. dressed weight, for some of the best cattle, perhaps 17 1/2c. @ 18c. for a dozen of the extras; 16c. @ 17c. for the general run of really good cattle; 15c. @ 16c. for common or medium grades; 14 1/2c. @ 15c. for inferior and poor; 12c. @ 11c. for some of the worst....

Milk Cows.—The demand has been slightly better the present week, but the cow trade has generally been quite dull. Poor cows are hard to sell at \$50 @ \$55, common to fair, \$60 @ \$70; good, \$75 @ \$85, extras, \$90 @ \$95, and upwards for a few fancy animals.... **Veal Calves** of very good quality have improved a little in value, and have sold at 13c. @ 14c. per lb. live weight; fair qualities, 11 1/2c. @ 12 1/2c.; inferior to poorest, 11c. @ 9c.... **Sheep and Lambs** have been in unprecedented supply, averaging over 25,000 head per week, and prices have fallen off materially, the very best sheep hardly receiving 7 1/2c. per lb. live weight; most good sheep, 6c. @ 6 1/2c.; common to very poor, 5 1/2c. @ 5c. Lambs, 6 1/2c. @ 8c. for poor to best.... **Live Hogs.**—The weekly receipts have increased about 2,000. With 15,127 swine on sale this week, and the low prices of beef and mutton, prices range at 10 1/2c. @ 11 1/2c. per lb. live weight, according to quality.

The American Institute Show of

fruits, flowers and vegetables, at their rooms in the Cooper Institute, New York City, was an attractive and instructive display. The grapes competing for the third time for the Greeley prize of \$100 formed a prominent feature. The show made by Mr. H. Z. Ellis, of Vineland, N. J., of pears, apples and quinces of great excellence, as well as other products, corn, egg-plants, etc., astonished those of us incredulous as to the great fertility of the Vineland district.—Mr. Horace Greeley showed monster squashes, and Solon Robinson made an exhibition of fruits "as they grew."—some fair, and large, and some curiously distorted and deformed by insect stings, and cracks, worm-eaten ones, etc. This was to show the fruit consumers of the city what the fruit raisers have to contend against, and why fair handsome fruit is really worth so much. The "Walter" grape shown by Ferris & Caywood, of Poughkeepsie, is a seedling of promise, said to be a cross of Delaware and Diana, and it looks so. Mr. W. S. Carpenter covered much space with the fruits of his orchard and farm, and Reisig & Hexamer made an especially fine show of potatoes. The impression is prevalent that no award can fairly be made of the Greeley prize for the best grape, all things considered, and that the matter will drop here, though the committee should certainly report in full,

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The Proprietors became fully convinced, several years ago, that the consumers of Tea and Coffee were paying too many and too large profits on these articles of every day consumption, and therefore organized THE GREAT AMERICAN TEA COMPANY, to do away, as far as possible, with these enormous drains upon the Consumers, and to supply them with these necessities at the smallest possible price.

To give our readers an idea of the profits which have been made in the Tea trade, we will start with the American houses, leaving out of the account entirely the profits of the Chinese factors.

1st.—The American House in China or Japan makes large profits on their sales or shipments—and some of the richest retired merchants in this country have made their immense fortunes through their houses in China.

2d.—The Banker makes large profits upon the foreign exchange used in the purchase of Teas.

3d.—The Importer makes a profit of 30 to 50 per cent. in many cases.

4th.—On its arrival here it is sold by the cargo, and the Purchaser sells it to the Speculator in invoices of 1,000 to 2,000 packages, at an average profit of about 10 per cent.

5th.—The Speculator sells it to the Wholesale Tea Dealer in lines at a profit of 10 to 15 per cent.

6th.—The Wholesale Tea Dealer sells it to the Wholesale Grocer in lots to suit his trade, at a profit of about 10 per cent.

7th.—The Wholesale Grocer sells it to the Retail Dealer at a profit of 15 to 25 per cent.

8th.—The Retailer sells it to the consumer for *all the profit he can get*.

When you have added to these *eight* profits as many brokerages, cartages, storages, cooperages, and waste, and add the original cost of the tea, it will be perceived what the consumer has to pay. And now we propose to show why we can sell so very much lower than other dealers.

We propose to do away with all these various profits and brokerages, cartages, storages, cooperages, and waste, with the exception of a small commission paid for purchasing to our correspondents in China and Japan, one cartage, and a small profit to ourselves—which, on our large sales, will amply pay us.

Parties getting their Teas from us may confidently rely upon getting them pure and fresh, as they come direct from the Custom House Stores to our warehouses.

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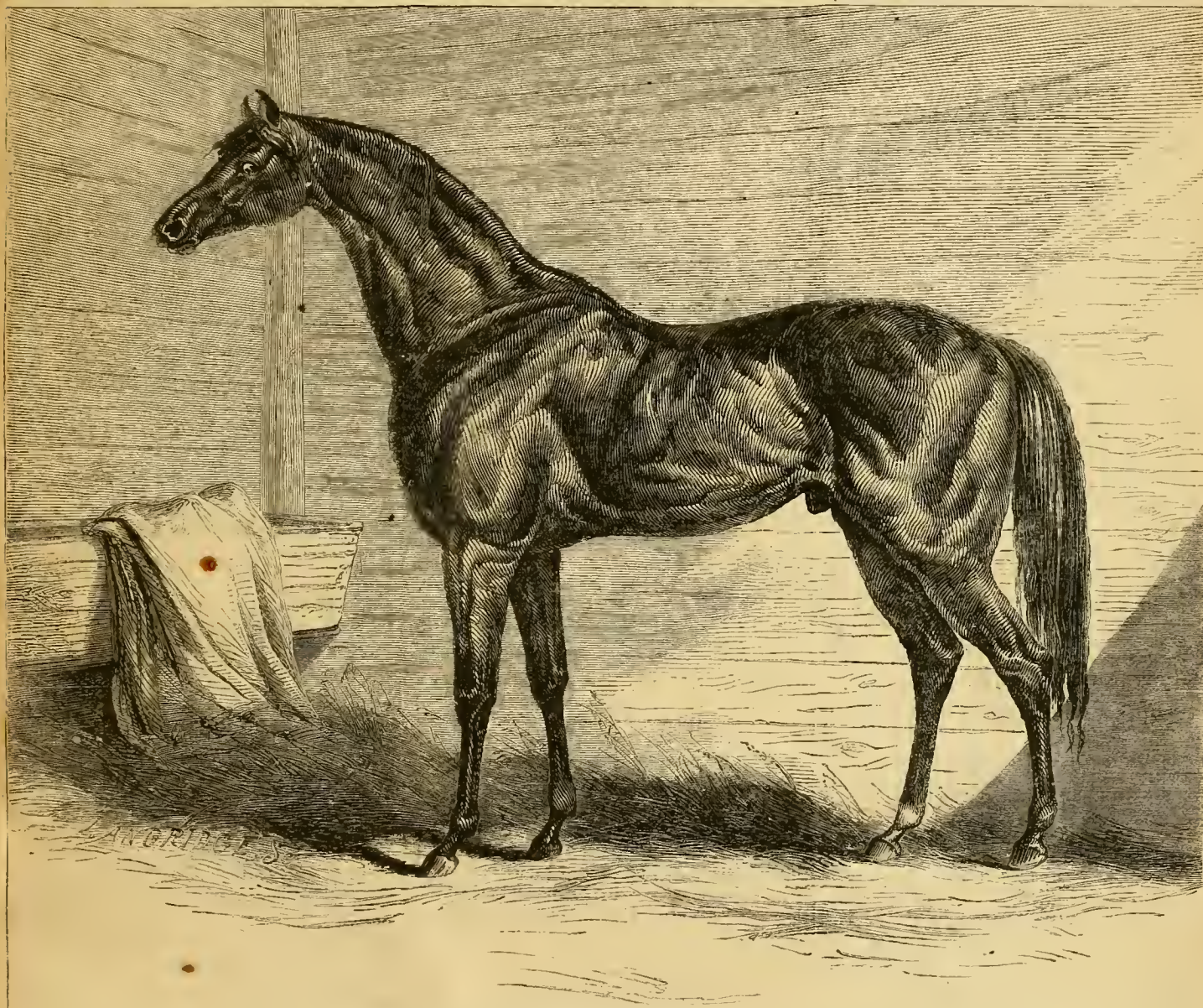
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VOLUME XXV—No. 12.

NEW-YORK, DECEMBER, 1866.

NEW SERIES—No. 239.



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"YOUNG ETHAN."—OWNED BY HOLABIRD & SATERLEE, SHELBOURN, VT.—*Drawn from Life for the American Agriculturist.*

This noble horse was the winner of the first prize in his class at the New England and Vermont Show, at Brattleboro, this fall. He is one of Ethan Allen's best sons, and takes after the old horse in many points, exceeding him much in size. His dam was a Hambletonian and Morgan mare; he is of a dark bay color, 15 $\frac{3}{4}$ hands high, and eight years old. It is rare to find a better combination of blood for a horse of all work. His grand-sire Black-hawk (the sire of Ethan Allen), undoubtedly owed many of his best qualities, as well as his color, to his dam, a black, half-bred English mare, while he re-

tained in a high degree the excellencies of the Morgans. (His sire was Sherman, son of Justin Morgan.) In the Hambletonians there flows the blood of some of the best thorough-bred horses that we have ever had in this country. The stock has long been justly famous, and many notable trotters have sprung from it. Ethan Allen is the "honestest," squarest trotter we ever saw go, and one of the very fastest. So it is not to be wondered at, that the fine stallion above pictured, standing, as he does, nearly 16 hands high, and superior to his sire in weight and muscle, while his action on

the road is exceedingly similar, should have made some very fast time. We have no record at hand giving his best performances. At the time of the exhibition, though not in trim for trotting, he went his mile in 2.43". He weighs 1120 pounds. We have been sorry to see the Morgans losing size, as was true of most of them, but if they are working up to this standard, without falling off in style, bottom, and other useful qualities, we can not desire anything better as a class of horses for the road. Such stallions, crossed upon large mares of good constitution, produce our most showy carriage horses.

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AMERICAN AGRICULTURIST.

NEW-YORK, DECEMBER, 1866.

Plowing, stump pulling, wall-laying, field-clearing of stones and roots, underdraining, etc., must cease when the thermometer drops down towards zero. Still these are the appropriate labors of those favored sections where the plow may run in every month of the year, and where white clover and annual grasses afford abundant pasturage, though often cropped, from November to May.

This season is one of comparative rest to both the farmer and his stock. It is a time for him to read, to plan for the next year, to lay in a store of ideas, like as he collects choice seeds for his next spring's planting. We have often said that winter is the seed time of practical ideas, which bear their fruit in the season of labor. It is especially a time for farmers to compare notes. A. B. went to the fair, perhaps to the State fair; he brought away the hand-bills, cards, catalogues and posters of fifty different dealers, and he will never weary of talking over what he saw, and you may copy off the addresses and write to the parties for catalogues of stock, implements, fruit trees, or any thing you like. Almost all send such things free, or something free, though many charge a small fee for their very extensive and expensively illustrated catalogues, which are almost always very instructive. An immense stock of information may be thus gathered, and readily turned to account.

The Farmer's Club is the place for discussing improved stock, implements, new crops, better seed, and all such things, and were the readers of the *American Agriculturist* aware of what the benefits of such an organization might be to them, and what pleasure as well as profit they would realize, there would be a good club maintained in every country school district, or village at least.

The Retrospect.—We have climbed the hill, and before this month is past we may look over upon the sunlit prospects of the coming year; but now if we face about in the clear wintry air of these December days, we may well take a survey of the road we have travelled, of the mistakes we have made, and the points won—the failures and the gains. The year has had its anxieties, (more than usual). It has been a prosperous one on the whole; abundant harvests, ready markets, and high prices, have rewarded the toils of the husbandman. To a limited extent only has disease prevailed among flocks or herds. Other nations have suffered from war, from murrains, and from the failure of their harvests, while we are spared this distress, and our products are in great demand.

Our commerce increases, and even our internal disquiet does not prevent the most marked recognition of our prosperity and greatness as a nation. So ends the year. What the future has in store is known only to Him who has guided us thus far in prosperity and in adversity, and whom in thankfulness we trust to lead still in ways of prosperity and usefulness, and that our ill-deserts may not be remembered against us.

Hints about Work.

As we have hinted above, the farmer's most important winter work may be in cultivating his own mind, and not his alone, but those of his children and dependents. In this free and independent country, it is often hard to tell which is the servant, he who gives the labor of his free hands for money, or he who gives his money for labor. They sometimes change places, and very often the hired man becomes the more intelligent, cultivated, and wealthy of the two. Many a man has voted for a former day laborer as his representative in the Legislature, or in Congress. This comes only by good use of the golden hours of winter evenings.

Books.—The world is full of good ones. The less one knows, the better is he satisfied with what he knows. Those books upon subjects bearing upon a man's own calling, are a never failing source of

interest and profit; and in connection with books,

Periodicals both professional and those of general interest, are very important as educators. These things should be made available in each neighborhood, by means of a well selected

Circulating Library, established in a central location, in the school-house, a store, or in a private family, and open at regular hours. Even at present prices of literature of all kinds, a small sum only is required to establish and maintain such a library, if it be selected by a good agent.

Schools.—Review hints in previous numbers on this most important subject.

Accounts.—To begin the new year aright when it comes, the old year must be finished rightly. Farmers are very apt to run into careless habits about their accounts—not so much in money transactions as in their store bills, especially where the farm products are seldom sold for money, but are exchanged for family groceries. Go over all accounts, and get ready to commence with a clean balance sheet January 1st, 1867. A plain account book has prevented many a law suit, for it is the very best witness a man can take into court, provided it has been regularly and accurately kept.

Protections against Frost.—Protect cellars by banking up outside the walls with sods and dirt, or what is better, tan bark. Conduct off water dripping or flowing from leaves, and pack straw or leaves against such windows and doors as are not constantly in use. Pumps or hydrants may be protected by setting headless barrels around them and filling them with tan-bark, or manure, or manure. Protect underground cisterns, if necessary, by covering them with more earth. If water pipes freeze, clear the ice out by pouring hot water upon the ice through an India rubber tube. Exposed pipes may be protected very well by winding them with hay rope, and smearing this with clay.

Fodder.—It makes little difference how abundant fodder is; its waste is criminal. Those who throw out hay, straw, or stalks, to be trampled upon, and trod into the ground by cattle and sheep, do a very foolish thing, for if properly used as bedding even, it would be worth a good deal for manure. Racks ought to be provided for the yards and sheds, as well as for the stalls, and so constructed that all the cattle refuse may be worked over, as indicated.

Live Stock of all Kinds require the farmer's especial care and daily personal attention. The cold weather is apt to induce carelessness on the part of the hands, and animals are not all well watered or equally foddered, or systematically carded or cleaned, unless the master's presence secures faithful work. Feed and water regularly and well, and keep salt before horses, cattle and sheep. We like the Liverpool rock salt best. This comes in solid, hard masses, weighing several pounds, and lumps may be laid in the mangers or in salt troughs in the yard. Give all kinds of cattle a daily airing of two or three hours. Young cattle and sheep may have much more liberty. No class of stock should be allowed to run down in flesh—it is so hard to bring them up again, and keep the young stock growing.

Colts and Steers.—When we get a snow of a foot or more deep, it is a capital time to break steers and colts. For hints on horse-breaking see p. 432.

Horses.—See hints in last number. Look out for having them well shod and caulked as soon as icy weather comes. The best application for bruises and sprains is usually cold water and thorough rubbing. If very painful, put on rum and a little tincture of arnica, but put on raw spots. Cuts, or bruises, when the skin is broken, are best treated with grease and pine tar, melted together to a soft salve. See "Horse Hospital" in our Basket.

Working Oxen, if used, should be well shod and caulked, at any rate in front, otherwise one runs a great risk of having them get falls and sprains.

Cows.—Keep their stables clean, sprinkle gypsum to prevent the odor of ammonia. Give abundant ventilation, but not cold drafts. Make them exercise daily when it is not very icy. If kept in a

yard, see that the shed is dry, well roofed, and if possible board up the front in part, and put up feed racks. Put balls or boards on the horns of the "bullies" and of quarrelsome ones. It is said that corn mabbins fed to cows on the ground is a preventive of abortion. If there be any virtue in it, it probably lies in the cows' picking up some earth with the corn. It is well to give occasionally a handful of wood ashes, and if a cow's breath is not quite sweet, give pulverized charcoal and a table-spoonful of nitre (saltpeter) in her food.

Hogs.—Towards the last part of the fattening season, hogs gain slowly. As a general rule, feeding hogs is said to pay as long as they gain daily half of one per cent. That is, when a 200 pound hog gains a pound. Even that depends altogether on the price of corn and pork, and changes in the market may make it pay to feed hogs some weeks even, though they gain nothing at all. Slaughter hogs for family use in the coldest weather before Christmas. A friend of experience who advocates shooting hogs, fears that the recommendation of a correspondent to shoot a wooden plug into the forehead, would not be effective, unless with a pretty good charge of powder. He prefers shooting with a ball through the temples. A little experience will settle the question, and enable every one to avoid all music on slaughtering day.

Poultry.—After the hogs are killed, the poultry will receive unsalted scraps and swill not fit for cows, and it will promote a tendency to commence laying, if they have warm quarters. Those who breed for prizes will take care to provide warm sunny rooms, and keep them warm even by artificial heat, so as to get out a clutch or two of chicks of each breed they fancy, as early as the first week in February if possible. It will pay to take great care of fowls for eggs only, when they sell for four or five cents a piece, as they do now at retail in New York City markets.

Manure.—See hints in former numbers. We do not approve of hauling out manure in the winter, and spreading it, or leaving it in heaps on the land. It may be moved to distant fields when the shedding is good, and there laid in large compact heaps trodden down, and if possible covered with dirt.

Wood Cutting, Getting out Fence Stuff, etc., will occupy the attention of many farmers, and at the South, fence making is the order of the day as soon as plowing is finished. The time is now to provide dry fire-wood for a year hence, and posts and rails for next spring's setting, and use in fence-mending.

The Ice Harvest comes rarely in December, but it is well to be ready. If the ice-house is empty, have it cleared out, the straw dried, and renewed if too much broken; take out the sawdust altogether. The first ice is usually the purest and most free from bubbles, and it is great good luck to get one's ice all stored before the "January thaw."

Orchard and Nursery.

In December there is little to add to the notes for November. Whenever the weather will allow the work there indicated to be done, do it. In mild seasons, or in Southern localities, ground for the orchard may be plowed and subsoiled. If nothing can be done to facilitate spring operations, see that no harm comes to trees already planted.

Fences and Gates must be looked after, and put in a condition to keep domestic animals out of young orchards. They will either browse or bark the trees, and do more damage in a few hours than will be regained in all of next year's growth.

Rabbits and Mice, among wild animals, often do serious damage. The best way to keep off rabbits is, to sprinkle blood upon the trees. Leave no rubbish near young trees to harbor mice, and trample snow down so hard that they can not work under it.

Cions may be cut whenever the wood is not frozen. Saw-dust or damp moss are better packing than sand, for the reason that they come out free from grit. The object should be to preserve the natural moisture, and not keep them any damper or dryer than they would be if left upon the tree.

Manure often benefits an old orchard wonderfully. It may be carted out while the ground is frozen.

Fruit in the fruit room will need looking at occasionally. Keep the fruit room and fruit cellar at a low and uniform temperature. Send choice specimens to market just before the holidays. In the

Nursery the heading back and shaping of young trees is carried on in mild weather, and when the weather is inclement, the hands are occupied indoors in root grafting. In grafting, too much care cannot be exercised, and it is well to work at only one variety at a time to avoid all possibility of mixing kinds. See that surface drains are opened to carry water away from young trees, and that no water stands around stocks that have been heeled-in.

Fruit Garden.

Where an open month allows, ground may be manured, plowed or spaded for spring planting.

Trees in the garden will need the same precautions against animals, as noted under Orchard. If light snows accumulate in the heads of trees, shake it out before it becomes icy.

Manure may be spread around trees and shrubs.

Pruning of small wood on trees may be done, and currant and other bushes trimmed in a mild time, as may any neglected

Grape Vines; and if the wood is wanted for propagation, cut it into suitable lengths, tie it in bundles and bury it, upper end down, in a dry place, and cover the spot with leaves or litter. Cuttings treated thus will often callus nicely and be ready to make roots when set out in spring. If

Strawberry Beds have not yet been covered, do it before the ground is frozen and thawed many times. Straw, leaves, or corn stalks, will answer. Do not cover the crowns too much; the roots rather than the tops need protection from freezing and thawing.

Kitchen Garden.

The amount of out of door work will depend upon the weather. If the ground is not frozen hard, it will benefit stiff soils to throw them up in ridges, that they may receive the ameliorating influences of the frost. Clean up all rubbish; lay drains if the season permits, and do everything that will save a day's work in spring.

Roots, Celery, etc., stored in pits or trenches, as heretofore advised, will need gradual covering as the cold increases. Recollect that such things suffer more from covering too soon and heating than they do from freezing. Do not put on the final covering until winter has fairly set in.

Cellars, where roots are stored, should for the same reason be kept open as long as can safely be done without freezing the contents.

Cold Frames, in which cabbages, cauliflowers and lettuce are wintered, should be daily aired whenever the thermometer is above freezing. The great point is, to keep the plants hardy, and this is done by preserving a low and uniform temperature. Cauliflowers are more tender than the others, and in very severe weather the glass should be covered with mats or shutters. Poison or trap every mouse.

Hot-beds will be wanted in February and March. Have the sashes and frames in readiness now that there is leisure. Paint, re-glaze, and have all in working order. Accumulate a supply of

Manure for hot-beds; the best is that from horse stables, long and short together. Manure for plowing and spading in should be looked out for, and all available materials, whether from the house, privies, stables, piggeries, or hen-houses, should be saved. Look around in the neighborhood for any mineral, animal or vegetable material, going to waste, that may be profitably secured as a fertilizer.

Seeds should be overhauled, and those of doubtful vitality rejected. If uncertain as to the value of a lot, plant a few in a saucer or other dish of earth; keep moist in a warm place. Order seeds early.

Tools should be looked over and repaired as needed. Paint all parts that need it, and supply deficiencies by purchase.

Flower Garden and Lawn.

Plan in winter that which is to be executed in spring. If the weather serves, something can be done towards laying out walks, and in making other improvements. It

Tender Shrubs or other plants are without winter protection, give it before severe freezing comes on.

Climbers, such as Wistarias, climbing roses, etc., will in very cold localities do much better if laid down and covered with a little earth.

Lawns will appreciate a good dressing of composted manure, which may be applied any time in winter. Do not let

Evergreens nor close shrubs be broken by accumulated snow. Shake it out before it becomes ice.

Rustic Baskets, vases, seats, etc., may be made indoors. Branches of Cedar, Laurel, Wild Grape, and many other things may be used for the purpose.

Green and Hot-Houses.

In green-houses, which are only to preserve things for the winter, all will go well if the thermometer does not go below 40°, but if flowers are wanted, it must be about 60°. That of the hot-house must be governed by the character of the collections. Ventilation must be properly attended to. Bring forward pots of

Bulbs, a few at a time, so as to have a succession of bloom, and when the flowers are past their prime, cut away the stalk and allow the leaves to grow to perfect the bulb.

Camellias need to be kept cool, and the atmosphere moist by free use of the syringe.

Cacti need but very little water, except the Epiphyllums that are now blooming.

Pelargoniums should be put where they have plenty of light.

Insects will require attention. Tobacco smoke quickly does for the green fly, and a moist atmosphere is destructive to the red spider.

Cold Grapery.

Do not let the house get too warm, but open the ventilators on warm days and close them at nights, and on cloudy and cold days. The vines should be laid down and covered. They may be bound up with straw, or a board put up in front of them on edge, supported by stakes, and the vine covered with forest leaves. It has been recommended to paint over the vines with a mixture of whale oil soap $\frac{1}{4}$ lb., sulphur 4 lbs., tobacco $\frac{1}{4}$ lb., and powdered nux vomica 1 oz. These are to have a gallon of boiling water poured over them and stirred well together. When cold, apply to the vines with a brush to destroy the larvæ and eggs of insects. In laying down the vines, be careful not to make too short a bend.

The Apiary for December.—Those having bees will doubtless find in this month the most leisure to repair old or make new hives and honey boxes. In view of which, if the number of swarms admit, it would be advisable to build a small house, say 10×12 feet, placing it near to the apiary, in which to make, repair, and paint hives, as well as for storing them, straining and storing honey. It is a convenient place into which to remove a colony for any operation that may be desirable or necessary. Bees being more easily handled if removed from their accustomed stand, the other hives being less disturbed, will less annoy you. A house can be easily and cheaply made, requiring but a door in one end and a window in the other, a work bench on one side, space for hives opposite, and for boxes overhead, a barrel, containing a basket set in one corner, into which to throw broken honey combs for straining, a shelf under the bench with paints and brushes, 2 planes, 1 square, a hammer, a saw and nails above. Thus furnished, all is ready for work at any and all times. If your time or skill will not enable you to make good hives, the better you get them made, the less repairs

they will need thereafter. A good hive should last a life-time. If one intends to increase his bees, he should not forget to provide sufficient hives. In deciding this, let him consider if flowers are plenty yielding pollen during the season; if not, can they be supplied. If honey is his object (which also includes an abundance of honey producing flowers), large boxes, without top or bottom, holding frames, called "supers," as well as boxes, will be necessary, though supers without boxes are often preferable. Non swarming hives have been patented to obtain large yields of surplus honey, (still the bees do frequently and repeatedly swarm); their greatest fault is, that you lose the reproductive force of the hive. By using supers, into which you lift frames from below, replacing them with empty ones, you avoid swarming and increase the working force.

AMERICAN HORTICULTURAL ANNUAL for 1867.

An Important Work.

This Annual is rapidly progressing, and will be ready before the opening of the New Year. Its plan will be different from any heretofore published in this country, and it will aim to be a

Record of Horticultural Progress, for the year 1866, free from matters not legitimately belonging to Horticulture.

The Material is all New.

and not a reproduction of old articles that have served their turn elsewhere. The volume will be

Liberally Illustrated.

with engravings made especially for the purpose. That a Year Book of Horticulture is needed, is shown by the readiness with which

Distinguished Horticulturists

have contributed to its pages. Among other contributions from experienced cultivators, there will be

The Apples of 1866, by Doct. John A. Warder, President of the Ohio State Pomological Society, Author of American Pomology, etc. New Ohio Apples; New Indiana Varieties; Southern Varieties fruited at the North, etc. *Illustrated.*

New and Noteworthy Pears, by P. Barry, author of the Fruit Garden, etc., giving descriptions of new varieties as well as of the less known ones that have been fully tested. *Illustrated.*

New Bedding and other Plants of 1866, by Peter Henderson, Florist, etc. An account of the newer varieties of bedding and other flowering plants, and their success and failure during the past year. *Illustrated.*

The Rarer Evergreens that have Proved Valuable, by Thomas Meehan, Editor of the *Gardener's Monthly* and author of the *American Hand-book of Ornamental Trees*.

New Vegetables of 1866, by Fearing Burr, Jr., author of *American Field and Garden Vegetables*; giving the author's experience with newer culinary vegetables.

Small Fruits in 1866, by Andrew S. Fuller, nurseryman, author of the *Grape Culturist*, *Forest Tree Culturist*, etc. A valuable summary of all the small fruits, excepting grapes.

Home Decorations, by A. Bridgeman, Florist. How to treat Ivy; Hanging Baskets, Rustic Stands, etc. *Illustrated.*

New Roses of 1866, by John Saul, Florist, of Washington, D. C., and well known authority on Roses.

The Cultivation of Horse-radish, by Peter Henderson, author of *Gardening for Profit*. Concise directions for growing this profitable crop. *Illustrated.*

Grapes in 1866. From notes by Geo. W. Campbell, Delaware, Ohio, and other Grape Growers.

Propagating Grapes in the Open Air, by William Patrick, Terre Haute, Ind., giving a method by which the Delaware and other difficult varieties may be grown—without artificial heat.

Useful Seed Tables, by James Fleming, Seedsman, New York, giving the amount of seed to the acre, to a given length of drill, etc.

Other communications by well known authorities, besides a great amount of Editorial matter, including a

Calendar for each month in the year, articles on Wine Grapes, Table Ornaments, Hedges, Farm Nurseries, Tree Labels, New Potatoes, List of Engravings of New Fruits and Flowers published in 1866. List of Works on Horticulture for 1866. A Dictionary of Horticultural Terms, and a host of other matters of interest, both to the professional and amateur gardener.—Price



Containing a great variety of Items, including many good Hints and Suggestions which we throw into smaller type and condensed form, for want of space elsewhere.

Mark All Subscriptions sent in as New, or Old.

For Market Report, See Page 451.

—The report of the Live Stock Markets show unprecedented large receipts of cattle, sheep, and hogs, with a consequent heavy decline in prices, though the selling rates are still far above former times. Now, 15¢@16¢, per lb. dressed weight for good cattle is considered very low; it is not many years since 8¢@9¢, was considered very high. Other farm products are even above the war prices.

Sundry Business Items, important this month, will be found on the *inserted* extra sheet, pages 425 and 426.—The Title page, and Index to the volume are on a loose extra sheet, which should be preserved, as noted on page 425. These extra sheets each cost the price of quite a farm, on our enormous edition, at the present exorbitant prices of printing paper; but with the generous patronage extended by our readers and advertisers, we can afford to make these additions instead of curtailing the reading matter in the least.

Ink Recipe—Correction.—Instead of the directions on page 346 (Oct. No.) read, as corrected, Mr. Bull: In one gallon rain water put 2 ounces of extract of logwood, and $\frac{1}{2}$ ounce of bi-chromate of potassa. Heat, and when dissolved, strain, and add $\frac{1}{2}$ ounce of aqua ammonia. The articles are kept by most druggists.

The American Agricultural Annual will contain a brief review of the past year—notice of important events, inventions, publications, etc., affecting the agricultural interests of the country, importations of stock, introduction of new crops, etc.; contributed articles of an interesting and practical character, fully illustrated; practical hints in regard to work, and machinery, besides convenient tables, and a full almanac. The publication of this will be a few days later than that of the *Horticultural Annual*. We can promise articles from distinguished contributors, varied and practical in character, and a store of valuable facts for reference.

Gardening for Profit, by Peter Henderson. We hoped to be able to announce in this issue that this book was ready, but the crowd of work in the engraving room has delayed the illustrations. The work is otherwise nearly ready, and we shall doubtless be able to fill the numerous orders by or shortly before the new year.

Steaming Fodder.—Coarse fodder may be made to go a great way, with a little art. Cattle and horses refuse cornstalks, not because they are not good feed, but because they are hard to chew, and they choose not to chew them. Cut up by a good stalk cutter that either cuts them in half-inch pieces, or slices them very diagonally, and soaked 24 hours, wet with hot water, meal and the hardest salt being added, will almost all be eaten. Still, *steaming* is better, for it does not necessitate keeping 24 hours' stock of prepared feed on hand all the time. The most convenient steaming apparatus is probably a hoghead hung in trunnions, the steam being passed to the bottom through a rubber hose from a boiler. With such an arrangement all kinds of fodder, straw, stalks, hay, roots, etc., may be cooked for cattle or swine, and the greatest possible economy in fodder attained.

Smart-weed for Fodder.—A writer in the Nov. *Gardener's Monthly* has an article on the use of Smart-weed as fodder for horses. As Smart-weed is a very acrid plant, and will cause severe inflammations when applied to the skin, it struck us as rather strange horse food; but on reading the article, we find the botanical name put down as *Polygonum Persicaria*, which is not Smart-weed at all, but is Lady's-thumb, which a horse might be ungallant enough to eat. Smart-weed is *Polygonum Hydropiper*. It is not often we catch our friend Meehan out in his botany, and this is really only a misapplication of common names, which are quite apt to get mixed. We only picked him up for the sake of let-

ting him down very gently, and congratulating him upon making so useful and excellent an horticultural journal. Its title indicates its real character as *Gardener's Monthly*.

The Common Milking Goat.—"T. M." Alleghany Co., Pa., wishes information about the Common Goat. "How much milk will one give? Are they not good milk stock for those living near railroads?" Ans.: The quantity of milk varies greatly. There is a Maltese breed said to give 1 gallon per day; 1 quart per day is, however, not unusual, and considered a good quantity. The goat is a very intelligent animal, and in little danger of harm from locomotives, boys, or dogs. The milk is held in Eastern countries to be better than cow's milk for those affected by miasmatic diseases (chills and fever, etc.), probably a mere notion. Goats are great nuisances, getting very familiar, and pushing themselves where they are not wanted, besides they will bark any fruit and shade tree they can get at.

Cows for a Small Dairy.—"G. W. A." Morgantown, West Va., asks "What breed of cows is best for a small butter dairy?" Were we to stock a yard with dairy cows, they should be selected without reference to breed from some good dairy region; if the object were butter especially, we would buy besides one or two good Alderney cows and an Alderney bull.

Sheep for a Small Flock.—Our questioner, "G. W. A.," asks about sheep. We presume his wish is to raise mutton for his own table, so without hesitation we recommend the South Down as the preferable breed. If, however, he wishes to raise mutton to sell, the Cotswolds, Leicesters, or some other large long wool sheep might be more profitable; depending on the market.

Musquash Skins.—Dealers inform us that prices paid last year, when there was an unusual foreign demand, form no criterion to judge of the prices this year, which will probably rule as low as 30 to 35 cents for prime skins, and perhaps less.—So the fashions vary.

The Sabbath School Question Books, entitled "*Lessons for Every Sunday in the Year*," are being rapidly adopted by schools of all Christian denominations throughout the country. They seem to exactly meet the wants of teachers, judging from the fact that over half a million copies have already been called for. They are supplied at about cost, viz., \$12 per hundred, or \$1.50 per dozen. If by mail, 4c. per copy extra, or 3c. each if in parcels of ten or more copies. Four sample copies (Nos. 1, 2, 3 and 4.) will be sent post paid for 65 cents. Superintendents and Teachers are invited to examine these books.

Long Subscription Letters are not necessary or desirable. Here is a convenient short form.

WASHINGTON, JOHNSON CO., IOWA, Dec. 1, 1866.
Messrs. Orange Judd & Co., New York City:
Enclosed are Five Dollars for the *American Agriculturist* for four subscribers, to begin January 1st, 1867, viz.
John Doe, Washington, Johnson Co., Iowa.
Richard Roe, do do do.
Peter Smith, Webster, do do.
S. J. Karl, Freeport, Sioux Co., Wis. (German).
Yours, respectfully, JOHN DOE.

Seal tightly, and address plainly to Orange Judd & Co., 41 Park Row, New York City.—Let all matters referring to the reading columns only, such as information given, notes, queries, etc., (which are always welcomed,) be on a separate piece of paper, marked "for Editors," each piece containing the date, name and residence of the writer.

Iona and Israella Grapes.—W. B. Waldo. Both these varieties grow from cuttings in the open ground, but the wood is as yet too valuable to use in this way.

Trade Sale of Grape Vines.—The periment of a regular Trade Sale of Grape Vines, at auction, commenced by Parsons & Co., last year, is to be continued this season, as will be seen by their advertisement. There are many advantages in this method of supplying the wants of dealers, which should lead them to encourage the permanence of this arrangement.

The Buckeye Mower.—This implement was selected and placed in our Premium list last year, and again this year, before we had the least inkling of the probable decision at the great Auburn trial. We are, of course, highly gratified, on finding the propriety of our selection confirmed by the result of that trial, which was far more thorough and exhaustive than anything of the kind previously undertaken in this country. The award was announced in the October *Agriculturist*, page 346. Farmers will, of course, work all the harder now to secure this premium. Several obtained it last year, and many more can do so this year.—By the way, our atten-

tion has been called to what was, to say the least, very far from an honest, straightforward business transaction. An editorial notice appeared in the N. Y. Daily Times, referring to the award of the gold medal to the Buckeye for sundry enumerated excellencies as a mower. This notice had an extensive circulation in other journals, with the name of W. A. Wood's machine substituted for that of the Buckeye, and the notice changed to read "for the best combined mower and reaper," followed by an enumeration of the excellencies of the Buckeye, printed as if belonging to the Wood, viz., "Perfection of work in all kinds of grass, and on every variety of surface, lightness of draft, ease of management, perfection of mechanical construction, simplicity, strength, and durability." The committee, on the contrary, gave to the Wood machine the preference over its chief competitor, the Eagle, for ease of draft, and smallness of side draft. They gave the Eagle machine the preference for quality of work and facility of management, as compared with the Wood machine, and placed them on the same level as regards simplicity of construction and durability. The Buckeye will, of course, not be injured in the end by this improper borrowing of its plumes. The actual decision of the Auburn committee will not be obscured by any specious efforts of interested parties. We are favorably disposed toward the Wood machine for its real excellence, but it is our duty to refer to the attempt to use the press to give a wrong coloring to the facts, as we understand them.

Crib-Biting.—An "Ex-Officer," who has studied this disease in the army, before he entered it, and since he returned from service, makes some suggestions which, considering the very indefinite views usually held by veterinarians about it, are worthy consideration. We regret he has no experience in regard to a cure. "I have read the *Agriculturist* for years past, and have found that authors call this disease an affection of the stomach, or locate it in other places, still more remote from the seat of the complaint. I have taken pains for the last six or seven years, both in the army and while out of it, to look into every horse's mouth that gave the well known intimation of being afflicted with what is generally termed 'cribbing,' or 'wind-sucking,' and I have in no instance failed to find that the gums grow down between the upper teeth—some within a quarter of an inch of the ends of the teeth, others not so far, but *all* that characteristic without exception. From this I conclude it is a crowding of the teeth and gums, instead of any intestinal diseases. The pain and irritation caused by the pressure, makes the horse press his teeth upon the first horizontal piece of anything he comes in contact with, to obtain relief. The pain he is in, no doubt causes him to grunt, and the eructation of wind from the stomach is but the effect of having the head and neck in the position he takes. For a cure, I would suggest that keeping the teeth from crowding each other, or the gums, or both, will at once cure the malady."

White Wire for Clothes Lines.—

"White Wire" is simply galvanized iron wire, that is, iron wire coated with zinc, which prevents its rusting. Most telegraph wire is thus prepared. Several correspondents have written that they use this telegraph wire obtained from the telegraph companies, and find it to answer a very good purpose, while it is permanently durable. The "Washburn & Moen Wire Works" make this galvanized iron wire with extra smooth surface for clothes lines. It is wholesaled by the Agent in this city (E. A. Moen, 42 Cliff street) by the ton, at 13 or 14 cents per lb., and in half mile coils (about 170 lbs.) at 15c. per lb. The No. 8 or No. 9 size is that used for clothes lines. No. 8 weighs about 7 lbs. to the 100 feet, which at 15c. per lb. would cost one cent per foot, exclusive of freight. A few neighbors could readily combine and get a ½ mile coil, the smallest quantity sold by the agent, and divide it. Allowing \$2.60 for freight on 2,640 feet, would make the cost only \$1.10 per 100 feet. We presume hardware dealers would get it and retail it at about 2c. per foot if requested to do so. Anybody has a right to buy, or sell, or use this wire.

To the Wives of Generals, Judges, Senators, etc.—

We have been shocked recently by seeing the names of the wives of some of our most esteemed Generals, U. S. Senators, etc., boldly published as patrons and endorsers of various "Gift" and other enterprises, ostensibly got up in aid of charitable or benevolent objects. A close examination shows that in most cases the operators use these names only indirectly, though in such a manner as to deceive the public into a belief that these ladies are really at the head of the schemes, or at least largely interested. But in some of our humbug investigations, noted elsewhere, we have seen letters, undoubtedly genuine, from some of the ladies referred to, in which they do give their direct countenance and encouragement to Gift Enterprises, presentation festivals, charitable fairs, etc., which are in

reality neither more nor less than "covert Lotteries." These are of a worse character, if possible, than the old fashioned "regular" lotteries, where a man is boldly told the risk he runs, the chances in his favor, what he is to pay, and what to hope for. In these, on the contrary, his kind feelings and sympathies are worked upon, to filch money from him, ostensibly for good objects, when the chief part of it really goes into the pockets of the shrewd managers. We earnestly entreat these ladies not to lower the good reputation of their husbands, whose names we have delighted to honor, by connecting them in any way with these enterprises, and not to allow themselves to be made the instruments of extracting money from people who would not think of giving it but for the endorsement of distinguished and esteemed names. Give liberally to our country's defenders and their families, but do it directly—not \$1 to them, and \$4 for poor plated ware, and to the pockets of artful operators.

Manure Making by System.—

Last month (p. 386,) we noticed the fact that Bommer's Patent Method for making manure was open to the public, and that we had a stock of the pamphlets describing the process for sale.—(See Book List.) We have received so many letters that we add: The description is in both English and German, illustrated sufficiently to give a clear idea of the process by which all kinds of herbaceous vegetable growth, muck or peat, in short all the litter and refuse of the farm may, with the addition of a certain quantity of animal manure, solid and liquid, on simple substitutes easily obtained, be converted into a rich manure.

Paintings, Engravings, etc.—

To several inquirers in regard to objects of art, we will say that the largest and best retail stock in the city of these things, including beautiful carved works in wood, artists materials, etc., is probably at Knædler's (late Gumpil & Co.), 772 Broadway, cor. 9th st. There is a fine picture gallery connected with the establishment, to which admittance is usually free, that is well worthy of a visit.

Large Flocks of Chickens.—

"A. C. H." Washington, Iowa.—We have never known of more than a few hundred fowls being kept in one yard in this country, and these large flocks did not do well more than a year or two. It is our opinion that, with ordinary care, when 25 or 35 hens and 2 or 3 cocks are wintered in one well furnished yard, and are allowed to hatch 300 to 350 chickens before the middle of June, that these may all be well cared for upon one acre of ground, and the chickens, say 250 to 300 of them, fattened for market. But even then we would plow this acre, a quarter at a time, once or twice during the summer, and the next year take a new piece of ground, and raise a crop on the first. With this practice we think a man might keep as many separate yards of fowls as he can devote land and labor to, allowing about 3 acres to each yard, and having conveniences to isolate diseased birds, if it is desirable to give them a chance for life. On some such plan great numbers of healthy poultry may probably be raised on the same farm.

Experience with Sick Chickens.—

Mrs. E. A. F. A., of Vincennes, Ind., writes in sympathy with Mrs. J. R. T., thinking the disease he describes on page 347 (October) is identical with one by which her poultry has suffered. She says she dissected many that died, and found in every instance the liver badly diseased. "We tried every remedy we could hear of without avail; as a last resort we shut them up in a light airy coop, and lost no more until we again let them run at large, when they again sickened, and we again confined them as before. This fall, after several weeks, we again let them out, when five took sick and died. Since then we keep them shut up, and they are in perfect health, and when we occasionally kill them for the table, we find their livers very different from the gangrenous things of those that sickened and died when allowed their liberty."

Barberry Seeds.—

T. Roselough, Douglas Co., Kansas. It is not necessary to sprout these. The seeds may be sown as soon as ripe, or they may be kept mixed with sand, in a cool place, until spring.

Plants Named.—

J. McNicol, Co. Bruce, C. W.. The grass is probably *Elymus striatus*, a species of Lyme Grass, or Wild Rye.... H. F. Hyde, West Woodstock, Conn. Not a Cactus at all, but one of the very best Sedums, *Sedum Sieboldii*; a most valuable recently introduced herbaceous plant, as it is a late bloomer.... Doctor Læffler, N. Y. The vine is *Boussingaultia basseloides*, commonly known as Madeira Vine, a useful climber with very fragrant flowers. The leaf is that of the common Pitcher-plant, or Side-saddle flower, *Sarcocolla purpurea*.... Wm. Warder, Pine Meadow, Conn. The Fringed Gentian, *Gentiana crinita*, and one of the most beautiful of our wild flowers.... R. Parnell, Queens

Co., N. Y. Apparently *Solidago latifolia*. Solidagos and Asters are not always certainly determined from fragments.... H. Stidolph, Jefferson Co., Mo. The Spider-wort, of which flowers but no leaves are sent, is probably *Tradescantia pilosa*.... N. B. B., Troy, N. Y. Apparently *Coronilla varia*, but pods too young to tell certainly.... Mrs. M. Beck, Litchfield Co., Conn. The annual is *Centrostegia macrospora*; the other is some *Zephyranthes*, but too much broken.... L. W., Johnson's Creek. No. 1 is like the leaf of *Artemisia vulgaris*, or Mug-wort. No. 2, the young growth of Red Cedar—or some such.... J. K. Leaning, Otsego Co. Some *Euphorbia*, which needs seeds for determination.... A. L. Child, Glendale, Nebraska. No. 1, an Aster, related to *multiflorus*, no telling without leaves. No. 2, another Aster, ditto. No. 3, ditto. No. 4, *Gentiana Saponaria*, Soapwort Gentian.—With the exception of a few specimens put aside for more careful examination than we can now give, we have named all the plants on hand that could be named, and the rest have gone into the rubbish basket, and we thus close up our botanical matters for the year. Now a word to the good friends who send us specimens. We do not keep a guessing shop, we cannot afford to soak out crumpled specimens. Such help as we can give in determining plants, is given cheerfully, but you must do your part, and give decent specimens. When the lower leaves of a plant differ from the upper ones, send one of them. We like conundrums, but don't care for them in the shape of plants, and hereafter shall not guess at the little snips that are sent. Very few have any idea of how much time may be wasted in trying to make out what would be plain enough, did the collector take a little pains to give us a leaf with the flowers.

Planting Chestnuts.—

S. Seymour, Rockford, Ill.—The nuts are difficult to keep and do best if planted in autumn. Plant in seed beds of light soil, not deeper than the thickness of the nut; then cover the bed with several inches of leaves, upon which a little earth may be sprinkled to keep them from blowing away. This closely imitates the natural sowing in the forest. Of course the leaves are to be removed in spring.

Marble-head Mammoth Cabbage.

—Mr. J. J. H. Gregory, of Marblehead, introduced this variety some years ago. He sent us one of the kind he buries for the winter to be used for seed raising next spring. The man of the Independent will please notice that this was a Cabbage and not a Cabbage Stump. We are glad Mr. G. sent only one, or there would not have been much room for anything else in the office. This head, divested of its outer leaves, measures 24 inches in diameter; weighs over 30 lbs.; is very solid, and is crisp, and sweet in the raw state; certainly a fine specimen.

Sundry Humbugs.—

Subscribers are continually writing to inquire about parties that have already been shown up in these articles. We cannot afford room for reprinting. Please look through the past numbers. Over 200 swindlers have been directly or indirectly exposed during the present volume.... After the continued hard knocks administered to the swindling fraternity, in every paper for a year past, we are half disposed to take a "breathing spell" for a month. We would very gladly drop the subject entirely, as it is always a disagreeable one; but somebody should do it, and until the press of the country generally shall help to open the eyes of the people, and cease to aid swindlers by advertising for them, we shall not shrink from the labor, at whatever cost of time, expense, and pleasure. If need be, a half column, or more, will be devoted to this subject in the numbers of the next volume, and our readers will, therefore, please aid in the important work, by keeping us promptly advised of all new circulars and other schemes that come to their knowledge. The reports for a month past, embraced in a peck or so of letters before us, we will not take up in detail, but give a few general hints covering most of them: 1st, Here are nine different gift enterprises, generally of a very plausible character, and well calculated to deceive the unwary, and even some intelligent people. The most dangerous of these are those got up *professedly* to aid wounded and disabled soldiers, or their wives, widows, or orphans. Concerts, tickets, gifts, greenbacks, houses, farms, pianos, watches, sewing machines, jewelry, etc., etc., are offered to subscribers in large amounts as bonuses, to be distributed by lot to subscribers to these charitable funds, of which, ostensibly, a large, but really a very small proportion, is *promised* to such funds. The daily, weekly, and illustrated papers, set up these schemes in large displayed type, and attractive form. The names of generals, and of men in high places, and their wives—generally obtained under false pretences, are used without any permission—or displayed in a way to make them appear patrons of these enterprises. We have looked into the machinery and operations, and mark our words, *all of these soldiers', soldier orphans' and widows' charitable festivals, concerts, etc., in which presents are*

promised by lot to subscribers, are frauds upon the community. There are at least a dozen on a large scale, throughout the country, and many smaller local affairs for monuments, etc. We speak not of legitimate fairs and festivals, but of all those where gifts, presents, etc., are offered for distribution. There are, universally, private parties who really manage them, and into whose pockets the main profits eventually go. This playing upon people's good intentions and kind feelings towards our soldiers and their families, is the meanest kind of stealing. These enterprises are *bona fide* lotteries, except in name, and the most disreputable of all lotteries—wolves in sheep's clothing. 2d, There are a score or so of purely gift enterprises, where, for a small sum returned for the tickets sent you, often professedly, but not really, at your request, you are offered a chance to draw, or have drawn, a prize varying from \$5 to \$100, or more. We have examined more than a hundred of these, and we here say that there is not one of all these ticket schemes, and gift enterprises that is not a fraud. Not one in a hundred of those who have sent their money for the tickets have ever heard from it, unless to hear the stalling falsehood, that it was "lost by mail." Some showy prizes, not really valuable, have been sparingly distributed as a bait to others, but the second crop invariably gets cheated, usually the first one too. 3d, We have chased up so many advertised medicines, and doctors for all sorts of diseases, that we are prepared to brand the whole tribe of advertising doctors as pernicious quacks. Not half of them can be found at the places they pretend to occupy. They get letters at these places at hours when you cannot catch them. 4th, "Agencies"—There are a large number of persons in this city, and elsewhere, offering by private circulars "agencies," some for one thing, some for another, and some for a variety of things, household apparatus, etc. A few of these are genuine; many are swindles, and some are about "half-and-half." It takes much investigation to get at the reliability and value of these concerns, and we advise extreme caution, especially when any money is required to try them. Our silence in regard to several recently inquired about, implies that they are bogus, or near to it, or of doubtful character. 5th, Eschew all "Art Associations." The "Michigan Art Association," with its only office in N. Y. City, is a fair specimen of many of them swindles. So is the pretended Masonic affair, at Medina, N. Y. Almost all are unmitigated humbugs. One or two, like the Crosby Art Association, may do what they promise, but how they differ from any other lottery is more than we can explain, except in accomplishing the same object in a meaner way; they add the "sympathy dodge." Beware of "One price watch companies," and of all watches by tickets; of "Howard" and all other benevolent medicine associations; of "American Jewelry Association;" of Ann Arbor \$2 tickets; of Jas. Pendergast & Co.; of "H. Camp, M. D., who insults respectable young ladies, by sending them circulars offering disgusting medicines;" of all cheap sewing machine offers, etc., etc. P. S.—A villainous scheme just comes to light—a pretended Franklin Benefit Association in Chicago, claiming Gen. Wm. B. Logan as President.—It is impossible he could officer such a scheme. One Joo. L. Andrews of Ohio, writes to ladies offering for \$50 to tie them tickets through worth \$500?—A deep-dyed villain!

Mareschal Niel Rose.—An "Old Florist" objects to the engraving of this rose given in the November *Agriculturist*, which he says does not do justice to this splendid variety. With him the flowers were as large as those of any good rose, and the color—which cannot be given in an engraving—is as yellow as saffron, improving as the flower opens. Our engraving was from the only accessible material, a partly opened flower. It is not strictly a Tea Rose, but a Noisette, and is a runner, after the style of the Lamarque, and like that, adapted to planting out in the open ground of the green-house; treated in this way, it attains its greatest perfection.

Grape Vines Growing in Autumn. T. Bost, Hemepin Co., Minn., writes, that the leaves of his small vines were killed by frost in September, and that subsequent warm weather has started the buds for next year, and asks if this will hurt the vines. It will be apt to injure them, and the young vines will require care. It is probably only the upper buds that have started, and that good buds still remain near the ground. Prune back severely, and start a new cane from a bud near the base.

Irrigation—Windmills.—W. Hawkins and several neighbors, of Sayville, (State not given) are interested in the subject of irrigation. There are two plans, one to "pipe" the water 1½ mile, the other for each to dig a well and get a windmill and tank on the upper part of his land. The former plan would be very expensive for one man to do, but might do for several combining to lay a large pipe. The windmill plan is feasible, and yet another may be better. A well on high

ground will often furnish a supply of water which may be delivered by a syphon (a simple pipe extending from near the bottom of the well to a lower level on the slope of the hill,) at a tank or reservoir. Windmills for simple pumping are advertised at about \$150.

Page's Pump and Sprinkler.—We saw this new contrivance for throwing water at the Cleveland Grape Show, and it impressed us as being very simple and efficient. Some apparatus for throwing a jet of water is very handy in various ways, and if this one is found to work as well in the hands of every one as it did in those of the exhibitor, it will take the place of more expensive machines.

White Willow.—E. F. Dunne, writes from Humboldt Co., Nevada, saying: "Away out here, 'Where the wild sage-stems of the desert die, In the cold white marshes of alkali,'

we live, farm and read the *Agriculturist*, and have a better home than the writer of the quoted lines imagined. We raise, first crop on the sod, 1,500 pounds of barley to the acre, and sell it, in bulk, for 8c. per pound *coin*. We are much exercised though on the subject of hedge-fences. Won't you tell us about that White Willow that Levi Smith writes to you of in September number, 1866. Where we can get it and how to manage it. Won't you put an item in the 'basket' for us?"—*Ans.* It is not hard to get the White Willow; almost any good nurseryman would send you the right thing, and once obtained, you could multiply it indefinitely in a few years. A few cuttings might be sent by Post. Your California nurserymen probably have it. But whether it will grow "in the cold white marshes of alkali," that is another question, which indeed you do not ask. Remember it bears several names, white, gray, powder, etc., besides the Latin, *Salix alba*.

English Market Measures.—In reading over the reports of the Covent Garden Market, one is puzzled at terms not in use in this country. We have been at a little trouble to look them up, and perhaps the result may interest others besides ourselves. *Pottle* is a long tapering basket made of shavings, and holding a pint and a half. *Punnets* are shallow baskets, varying in size for different articles; radish punnets are 8 inches across and 1 inch deep; those for mushrooms are 7 inches by 1; white salad punnets are 5 inches by 2 inches deep. A *Sieve* is a basket 15 inches in diameter and 8 inches deep, and holds 7 imperial gallons. The *half-sieve* holds 3½ gallons, and is 12½ inches across by 6 inches deep. The *Bushel sieve* is 17½ inches in diameter at top, 17 at bottom, 11½ deep; the *Bushel Basket* is at top 14½ inches, at bottom 10 inches, 17 inches deep.

Shades of Color in Outside Painting of Houses.—J. W. White, of Milfin Co., Pa., asks:—"In painting a wooden house should the cornice, window-facings, etc., be of a lighter or darker shade than the body of the house? Also, should the panels of doors, window shutters, etc., be darker or lighter than the panel frames?" The colors appropriate to wooden houses are light ones of some agreeable neutral tint, avoiding all positive colors, and all dark colors. The cornices, base and corner strips, pilasters, door and window casings, etc., should be of a slightly darker shade than the body of the house. So likewise should the panel frames be a little darker than the panels.

The Illustrated Annual Register of Rural Affairs for 1867. By J. J. Thomas. Albany: Luther Tucker & Son.—Another volume is added to this series, and, like its predecessors, is a useful compendium of agricultural and horticultural matters. It is sufficient praise to say of this volume that it is as good as the previous ones, and is well worth the modest sum it costs—30 cents. We would gladly stop here, but one of its contributors has been guilty of an act that we cannot, and ought not to allow to pass unnoticed. Upon page 84 is "A Chapter on Various Practical Subjects." [Written for the Annual Register, by S. Edwards Todd.] This article contains nine illustrations; eight of these are re-drawn from the *Agriculturist* for 1865; and the remaining one is taken bodily and literally from a work of which we hold the copyright—American Weeds and Useful Plants—without the slightest acknowledgment. The figures from the *Agriculturist* are re-drawn, slightly modified in one way or another, so as to avoid the copyright. Our original articles are paid for well, and every number of the paper is copy-righted in full, and not to be copied without credit. The author of this article was, unsatisfactorily to us, for a short time employed to aid upon the *Agriculturist*, and he may possibly think that he has a right to illustrations drawn for some articles of which he made the rough notes. Other people think differently. We are quite sure that neither our good friend, the editor of the Register, nor its publishers, had any suspicion of the trick of which they have been made the victims. They paid for the article as new, and will feel chagrined to find

they have instead a re-hash of old matter that has already appeared in a widely-circulated paper, illustrated by figures that will appear old and familiar to a large proportion of those who may purchase the Register. The publishers have our sympathy, as they will that of all honest men.

Trouble with a Steep Path.—"A Subscriber" in Tennessee, who lives on a mountain side, finds that every hard rain turns his path into a gully, and wishes to know what he can put upon it, as stones wash out and planks warp. Perhaps a little engineering would turn the bulk of the water in another direction. In such a place we should try gas-tar and gravel, or sand. As much tar as will stick the sand together, will soon harden and make a durable and pleasant walk. If, as appears likely, the path is below the general surface, then the cement should be laid upon the sides of the depression, as well as to prevent the water from working under. Another plan would be to pave the foot way, and make very capacious gutters on each side of the pavement, and plaster them over with a mortar of water lime. The latter plan is followed in some portions of Central Park.

Hardiness of the Quince.—D. P., 3,000 feet up on the Catskills, wishes to know the probable success of Quinces in that locality. As he raises apples and pears, we doubt not that Quinces would succeed. Do not plant in low wet ground, give good and well enriched soil, and take care of them as if they were pet pears.

The Study of Geography, as usually taught, involves a great waste of time. The pupil struggles through a long list of names which his burdensome memory refuses to retain, and many of which would be mere rubbish if retained, so far as any practical use is concerned. A new primary work by Miss Hall, published by Samuel F. Nichols, Boston, is a step in the right direction. By means of interesting reading lessons, accompanied with common-sense maps and illustrations, it leads the child to acquire information, and a relish for the subject at the same time. Teachers and parents will do well to examine the work.

"The Methodist" has made an important arrangement with Rev. Henry Ward Beecher, and other eminent clergymen, for a weekly sermon to be published in its columns.—See advertisement.

A New Map of N. Y. City and 1,200 square miles of the adjacent region, just published by the reliable firm of Messrs. H. H. Lloyd & Co., N. Y., gives a very complete view of the region, locating all rail-road stations with their distances from New York, the country roads, small streams, etc., more minutely and accurately than we have seen in any similar publication. It is a valuable work of reference.—Price \$2.00.

Documents Acknowledged.—The following catalogues of general nursery stock have been received: "The Evergreens," Saml. Edwards, La Moille, Ill.; Central Nurseries, Edward F. Evans & Co., York, Pa.; Thomas Wright, Rochester, N. Y.; Georgetown (Conn.) Nursery, Geo. Perry & Son; Erie (Pa.) Commercial Nurseries, I. A. Plattmann; Westbury Nurseries, Isaac Hicks & Sons, North Hempstead, L. I., N. Y.; Greenvale Nurseries, W. D. Strowyer & Co., Oswego, N. Y.; John Murphy, Dansville, N. Y.; South Bend (Indiana) Nursery and Fruit Farm, A. M. Purdy; Reading (Mass.) Nursery, J. W. Manning. "The three best Market Berries," Wm. Parry, Cinnamonton, N. J.... Catalogues of Grapes from A. M. Burns, Manhattan, Kansas; J. M. McCullough & Son, Cincinnati, O.; H. B. Lum, Sandusky, O.; Holton & Zundell, Haverstraw, N. Y.; A. J. Hatfield, Niles, Mich.... Catalogues of Bulbs, Seeds and Strawberries, Vilmorin, Andrieux & Co., Paris, France.... Catalogue of Farm Stock, Dogs, Fowls, etc., S. & W. S. Allen, Vergennes, Vt.... Catalogue of Edge Tools, Collins & Co., Hartford, 112 Water St., New York.... Catalogue of German Periodical Literature (*Zeitschriften-Liste*), 1866, E. Steiger, New-York.

The Festival of Song.—This is a gift book, published by F. J. Huntington & Co., New York. It consists of choice extracts from ancient and modern poets, compiled by Frederick Saunders, Librarian of the Astor Library, and prefaced by a brief account of the authors. The work is splendidly printed and bound, illustrated with original drawings by leading artists of the National Academy of Design—some of which are really charming.

The "Golden Leaves Series."—These are neat volumes, containing selections from the best productions of the older British, modern English, dramatic and American Poets. The selections, by J. W. S. Hows, seem to be made with taste and good judgment.

Heaves in Cows and Horses.—Lyman Pike, of Iroquois Co., Ill., writes: "In the *American Agriculturist* of October (page 317) I notice a case of a 'cow with the heaves.' I have never seen nor even heard of such a case before, but as I have been 16 years a practising physician, I think I can prescribe for the case. Horses having the heaves, on coming to the Prairies, soon get rid of the affection, and observation has proved that the cure is effected by rosin-weed (*Silphium terebinthaceum*). Of late the same article has been successfully used in the treatment of asthma in the human subject. May it not prove equally beneficial in the treatment of heaves in cows?"—[There are several *Silphiums* all called rosin-weed, and possessing similar characters, and most probably they have like medicinal properties.—Ed.]

Rearing Calves without Milk.—In answer to our inquiry of last month, "E. S.," of Bedford, Mich., writes: "Calves should have the mother's milk until three days old, yet they can be safely reared on the following gruel: Take one tablespoonful of wheat flour, and a teaspoonful of salt; mix with cold water to a paste; stir the paste gradually into three pints of boiling water, let it boil a moment, and remove from the fire. As the calf increases in growth, increase its food, which must be given blood-warm three times a day. When a week old, give a lock of hay or fresh grass. When a calf, three weeks old, let it have a gruel of sifted corn meal—one teaspoonful of meal to three quarts water; boil thoroughly, and never omit the salt. A handful of young mullen leaves boiled in sweet milk will cure the scours. 'Their opposite' is relieved by half tencup of melted lard—poured down the throat—repeated if needful."

Pears at Hammondsport, N. Y.—On another occasion we have mentioned the remarkable immunity from grape diseases enjoyed by the region around Hammondsport. The locality seems to be equally favorable to the growth of other fruits. We saw in the grounds of J. W. Davis, Esq., President of the Urbana Vine Co., several trees of the Virgaleu, loaded with fruit without a spotted or cracked specimen to be seen. That the pears were as good as they looked, we know from some specimens forwarded to us by Mr. Davis.

Buere Clairgeau Pears.—If a handsome plate of pears can be shown than one of Buere Clairgeau, that has graced our table for a week past, we should like to see it. The specimens were from Ellwanger & Barry, the well-known Nurserymen, of Rochester, N. Y.; they were so brilliant in color that many supposed them to be artificial. For quality, this variety cannot rank in the very first class, though we do not mean to say that it is bad, or even indifferent; it has a fine flesh, is sweet, but is rather lacking in spirit. Still its good size, great beauty, and the abundance with which it bears, combine to make it one of our most popular varieties.

The Tilden Tomato.—In the October "Basket," we stated that our own experience with this variety, as well as that of our neighbors, was to the effect that we had the wrong sort, or that the variety had been over estimated. Specimens from Mr. Tilden, Davenport, Iowa, Mr. Henry A. Dreer, Jr., Philadelphia, and reports from many correspondents, convince us that the Tilden tomato, as they grow it, is really a good thing—as good as need be—regular in shape, solid, few seeded, and of excellent flavor. We have either had the wrong sort, or the soil was not suited to this variety. The weight of the testimony received is decidedly in its favor.

Fine Cranberries.—"Are those Lady Apples?" asked a stranger on seeing a dish of cranberries on our table. We do not wonder at the mistake, for they were the finest cranberries we ever saw. They came from Mr. Orin C. Cook, South Milford, Mass.

Chestnuts and Horsechestnuts.—"Enquirer." Whoever told you that the large Spanish Chestnut was produced by grafting the common Chestnut on the Horse-chestnut, simply told that which was not true. The Horse-chestnut is in no wise related to the common Chestnut, any more than the Pineapple is to an Apple, or a Prickly-pear to a Pear, and there is not the slightest chance of the one growing if grafted on the other.

The Madras Radish.—*Raphanus cundatus*.—We scarcely open an English horticultural journal but what we find the merits of this thing discussed, and have several times seen it figured. It is a radish, the root of which is worthless, but is grown for the pods, which are 12 to 15 inches long, according to the soil. While some say that the pods are palatable when cooked like asparagus, others consider the thing worthless. We grew it some six years ago, found the pods a great deal

longer, but no better than any other radish pods, and discarded it as of no use. As the plant is making some stir in England, and may be again imported, we give our experience with it.

The Philadelphia Horticultural Society.—Mr. Henry A. Dreer, Jr., Treasurer, has sent us a photograph of the new Horticultural Hall now being erected in Philadelphia, with a description of the building, which will be of a size ample for the purposes of the Society, and of a style that will make it an ornament to the city. We look upon this picture with mingled pleasure and mortification. It is gratifying to know that Philadelphia has a Horticultural Society so thoroughly alive and prosperous as to need a spacious and elegant edifice, and we wish them the continued success. Our mortification is, that we can point out no temple in New York devoted to Flora and Pomona. In the very center of one of the largest gardening communities of the Continent, we have no Society to encourage the amateur, and no place to which the originator of a new thing can go for an endorsement. All other arts and sciences have a home, but Horticulture is shut out of New York as strictly as if it were a pestilence.

Insects and Plant Fertilization.—The concluding article of this series appears in the present issue, and in behalf of those who have read them with interest and profit, we thank their author for them. The facts that have been presented in these papers, have an interest to all who grow plants, while to the merely curious in natural phenomena, they open a new field of observations, which we doubt not many will improve. It is proper to add that these are from the pen of Dr. Asa Gray, of Harvard University.

Practical and Scientific Fruit Culture.—By Charles R. Baker. Boston: Lee & Shepard. In August last we gave a notice of this work, and should not recur to it now but for a conspicuous advertisement, in which the publishers see fit to make the following statement: "The publishers have the pleasure to announce a new edition of this elegant and popular work, which, according to the expressed judgment of candid and unbiassed critics in England and America, evinces the most extensive research, observation, and experience, and which has also excited the fears of rivals."—This statement is followed by several quotations, mostly from political papers. The above implies that those who have criticised this work adversely, were neither "candid nor unbiassed," and reflects upon every one of our horticultural contemporaries, who are supposed to be at least as qualified to judge of a pomological work, as the literary editor of a daily paper, and not one of whom but is ready to welcome any work that shows merit or promise. There never was a work upon horticulture so severely and justly criticised as this has been in this country; it may be true that it has been praised in England, for so much of it is quoted from English authors, that it must have to the English critic a very familiar look. As long as the publishers see fit to advocate this book on what merits it may have, we have nothing to say, but when they seek to prop it up by unfair innuendoes, we suggest that they are taking a course that will not be likely to accomplish what they seek.—If any of our readers desire to see how a large work can be made by "extensive research" among the writings of others, let him invest \$4 in Baker's Practical and Scientific Fruit Culture.

Snails or Slugs in Cellars.—One who has waged an unsuccessful war upon snails (slugs) in his cellar for many months, asks if some one who has been similarly annoyed and has succeeded in getting rid of the pests, will give through the *Agriculturist* the means employed.—The slugs or soft snails vary in size from an inch long to the size of a man's finger, and leave their slimy tracks everywhere on walls, vegetables, utensils, etc., and when cleared out, soon re-appear. We should think a free use of slaked lime would cure the evil, but trust to hear from the experienced.

Langstroth's Bee-Hive—Patent Extended—Important to Bee-Keepers.—Mr. Langstroth has devoted a good part of his life to the study of bees—and the bee-keepers of this country owe much to him. His invention consisted in having moveable frames to which the combs are attached by the bees so placed in the box hive as to have the tops of the frames, in whole or in part, separated from each other, with a narrow open chamber above the frames, and narrow spaces also on each side—so narrow that there is not room for the bees to build combs in these spaces, which will practically interfere with the removal of the frames. This gives ability to remove the frames and combs at pleasure. Mr. Langstroth patented his invention in 1852; it was re-issued in 1863; and just before its expiration (a few weeks

since), it was confirmed, and extended for 7 years. This extension inures to Mr. Langstroth's benefit, and not to those who have received rights or privileges from him, except so far as he chooses to renew their privileges.

The invention of this moveable comb hive has wrought a complete revolution in bee-keeping, the progress of which has been greatly accelerated by its aiding so much the introduction and dissemination of the Italian bee. Within a few years past a great many (not less than 30) moveable frame hives have been made, which, unless licensed by Mr. L., are infringements upon his patent. It has been currently stated, and believed by many, that Mr. L.'s patent was worthless, from having been anticipated in Europe, or in this country. On account of these statements boldly made, and endorsed by some prominent journals, Mr. L. applied for a confirmation of his patent and reissue in 1863, and as he found the Patent Office library very deficient in works on bee-culture, he brought his extensive collection of works, chiefly European, bearing on this subject, with him, for the assistance of the examiners. We learn that his claims to originality were thoroughly established. As he has realized comparatively little from his invention, he applied recently for an extension of his patent. In this he was vehemently opposed, and much evidence was taken. The Chief Examiner in his report to the Commissioner of Patents stated that the testimony of those opposing Mr. Langstroth was so contradicted by their own letters and published works, as to be "unworthy of consideration." The decision of the Examiner was appealed from, and a hearing was had before the Commissioner in person, who confirmed it, granting the extension. Mr. Langstroth's claims are therefore fully established, and all who wish to use moveable comb frames on his principle, will have to apply to him for the right to do so. This he proposes to grant on very reasonable terms.

Medicines for Plants.—We don't believe in them. One has a patent for peach curl, another keeps out borers by putting some compound in the crotch of a tree. The efficiency of these preparations is certified to by people who doubtless think they are doing the public a service, but they are not known out of their own neighborhood as horticulturists. We wish no advertisements for plant medicines for this journal.

The Forest Tree Cultivator.—By Andrew S. Fuller. New York: Geo. E. & F. W. Woodward. In whatever comes from Mr. Fuller's pen, we look for a certain amount of practical value, and while in this respect we are not disappointed in the present treatise, we cannot help regretting that he did not make it a more exhaustive one. The work is mainly devoted to the cultivation of our native trees, and will be found a useful guide to the tree planter. Price by mail \$1.50.

Woodward's Rural Art.—This is the first volume of what is intended to be an annual of Architecture, Landscape Gardening and Rural Art. It is a neatly prepared volume, containing 58 designs of dwellings of various styles, out-buildings, plans for laying out small places, etc. Published by Geo. E. & F. W. Woodward. We send it by mail for 75c. in paper, or \$1 in cloth.

Bulbs: A treatise on Hardy and Tender Bulbs and Tubers, by Edward Sprague Rand, Jr. Boston: J. E. Tilton & Co. A volume of about 300 pages, that includes the common as well as the rarer plants usually called bulbs. As far as we have been able to peruse it, the directions for culture are plain and practical, and we doubt not it will meet a want long felt by amateurs. The book is produced in very handsome style. Price \$3.00. We shall keep it on sale, and to send by mail.

Artificial Honey—The Best.—We have from time to time published various specifications for making sweet preparations that resemble honey; and some of which answer very fairly as substitutes for that article. Indeed, some people prefer the manufactured to the natural. Every now and then some chap gets hold of a recipe, and fixing up a glowing circular, persuades sundry trusting people to pay him from 25c. to \$5.00 for his "secret," or "patent," or "copy-right."—To find him out we paid one of these fellows \$2 for a "right" to our own previously published recipe.—Here is a recipe which we guarantee to make an article equal to or superior to any of the dollar or five dollar recipes offered. Put 10 lbs. of white sugar in 2 quarts of water, and gradually heat it, stirring it occasionally until brought to the boiling point. Then remove from the fire, and add 1 lb. of real honey. When half cooled, add $\frac{1}{2}$ lb. more of honey, and when only blood warm, add another $\frac{1}{2}$ lb. of honey. When nearly cold, add 10 drops of good essence of peppermint. This makes 16 lbs. in all of a very pleasant sweetening. Its flavor can be varied to the liking by adding less or more peppermint essence.

Make the Frost Aid You.—Few are aware of the beneficial effects upon all kinds of soil, and especially upon heavy land, of a thorough freezing and thawing. Eight cubic feet of water in freezing, swells to nine feet at least. Soils filled with water expand in the same way. The water dispersed all through the pores when freezing, cracks and pulverizes the soil, and fits it for plants, and releases much plant food. This freezing also kills many insects, insect eggs, and weed seeds. It is wise, then, to plow fields and spade the gardens into ridges and furrows in Autumn, so as to let the frost down as deeply as possible. This can be done at any time before the ground becomes solid. If so wet that it packs, the freezing will lighten it up again. The operation pays well. If ground be left in ridges with deep dead furrows or ditches, it will drain and dry off, and become warm a week or two earlier in spring, which is an important gain for the cultivator at that season.

Coal Tar as Paint for Houses.—"J. T." writes from Madison, Ind., "to the question: 'Is coal tar good paint for the outside of a small house?'—You answer, 'yes, if you like a black house.' I would answer, yes for either a small or large house. A good paint that will outlast any oil paint, on either wood or brick, and not be black either, can be made with coal tar."—"In whatever way "J. T." modifies the color, we presume he cannot avoid having it very dark, and this we decidedly object to for dwelling houses at least, which should be of a light cheerful color, if of wood, or of a natural stone color, if of brick or concrete.

What a Young Man Did.—We were pleased, on more than one account, by a recent call from a young man in Putnam County, a farmer boy student, we believe. Seeing our premium offers he started out, and in about four days work, all within a week, he obtained 157 subscribers to the *Agriculturist* at \$1.50 a year. His call was to bring in the names and order his premiums, viz.: the 16 volumes of Appleton's *Cyclopedia* and the Tool Chest, which were promptly furnished. He is thus well equipped for *mind* work and *hand* work. (The *Cyclopedia*, \$80, and the Tool Chest, \$14.50, or \$124.50 for four days work, is pretty good pay—it would pay well for forty days work.) Why may not you, reader, and hundreds, yes, thousands of others do the same thing. There are in our country more than ten thousand different Towns, which each contain more than 157 persons who would afterwards be grateful to any one who should persuade them to subscribe for this journal for 1867.

Butter Costs More than Flour.—After some inquiry, we estimate that in a family of ten persons, including two or three children between three and eight years old, a barrel of flour lasts 36 days. This is nearly the general average, of a barrel of flour a year for each full grown person. The same family (of ten) consumes an average of 1½ lbs. of butter per day, or 2 ounces each, including that used in cooking. The average retail price here, for good articles, has been for some time past, about \$16 per bbl. for flour, and 50c. per lb. for butter. (Both are higher now.) At these figures, it takes \$22.50 worth of butter to use up \$16 worth of flour—or an excess of \$6.50, equivalent to full 40 per cent. If we reduce the butter to 1 lb. per day, or 13-5ths ounces each, its cost will still be nearly 20 per cent. greater than the flour. This proportion will hold good throughout most of the country, as the relative prices of flour and butter are about the same as here.

Why the Best Flour is Cheapest.—Two dollars extra on the price of a barrel of flour, will secure a much superior quality. Any one who will devote a little observation to the subject, will notice that with poor bread, people eat from ¼ to ½ more butter than they do with that which is of superior or extra quality. If we reckon ¼ more, it will be seen by the calculations of the preceding item, that \$2 saved in the price of flour involves \$5.62 more expense for butter, or for other condiments to make the poorer bread palatable.

Beware of Advertised Recipes for Ink, Paint, Vinegar, Honey, etc.—We notice a good many of these advertised in newspapers and by private circulars, at from \$1 to \$5 each, with promises of wonderful profits to the purchasers. One editor offers as a premium for new subscribers, an ink recipe by which "you can make hundreds of dollars' worth of splendid ink, in a few minutes, for less than half a dime per gallon!" All of these advertised recipes have been published in the *Agriculturist* this year, with no patent or copyright to prohibit their general use. We have also published the vinegar and honey recipes. So don't give \$1, \$2, \$3 or \$5 to somebody who sells up a claim for their exclusive use. The Recipe of the "Great American Paint

Company" which we have referred to, (Aug. p. 278, and Nov., p. 389), has turned up. It amounts to fresh slaked lime with about 1-5th its weight of salt, and 1-6th its weight of sugar, mixing it with milk, and adding ¼ of its weight of Spanish whiting for white paint. For other colors, use, instead of the Spanish white, some yellow ochre for straw color, chrome yellow for lemon, indigo for lead or slate, chrome green for green, etc. The amount of these, and the mode of mixing, are not stated. For implements, use linseed oil instead of milk. (What say practical painters to mixing fresh slaked lime with linseed oil?) This is what we got for \$1 paid to the so-called "Great American Paint Company," by way of investigation.—The "Company" don't claim any "patent," but only say "copy-right applied for."—[Mem: Club subscribers will please credit us \$1 for this information, which is all they will get from the said "Company" for the same money. So we end the year square; you paid in \$1 and we return it here—throwing in the year's papers.]

Preparation for Leather.—The "Shoe and Leather Reporter" translates from the *Gerber Courrier*, the following recipe for a preparation which is said to be excellent for boots, harness leather, and belting, giving pliability, softness, and consequent durability: Melt 7 ounces of lard, add 1 ounce rosin, and stir well together when both are melted. In another vessel dissolve 3½ ounces of good hard soap in a quart (or 2½ pounds) of clean rain water. When dissolved and heated to the boiling point, add the prepared lard and rosin, boil gently a few minutes, and it is ready for application. The preparation is easily and cheaply made, and will doubtless render the leather pliable, even if it does not turn water, of which we are in doubt.

What we Saw.—On one of the coldest mornings of November, when the sterner sex were glad to wear gloves, thick overcoats well buttoned up, and not a few had winter caps on, well down on their ears, we saw a well dressed lady belonging to a well to do family, get out of the cars with a gentleman, and walk off through the cold wind, *boreheaded!* (There was something flat lying on the crown of her head, but it was so small we could not tell what it was.) A friend at our elbow said she was a *fashionable* lady.—We guess so.—[Mem. (from our note book): Hadn't we better open our advertising columns to the latest patent medicine, *consumption curing* *genuses!* Where's (Rev.) Edward Wilson, and the other such like humbugs?—The "catarrh" humbug medicine dealers may increase their stock, too, for the present fashion will largely increase this disease, and those who catch it, because they will conform to fashion at any cost or risk, are foolish enough to patronize such pretenders.]

Fastening Pencil Marks.—It is often desirable to prepare pencil notes or marks so that they will not rub off readily. A thin solution of gum arabic in water, or shellac in alcohol, applied with a soft brush, will do it effectually. But this is not always convenient, as when one is traveling, or at a library, as at the Astor Library where no ink is allowed in the reading room. Rev. I. L. Langstroth, the Bee man, writes us that a little saliva applied with the tongue or otherwise, over pencil notes, drawings, etc., will cause the lead to adhere so firmly that it will not come off without friction enough to injure the paper surface. He has used it for over 16 years with decided satisfaction, and thinks that, though a simple thing, it is very useful to know, and he has met with no one else who understood it. We have often used it for 25 years, but it did not occur to us that it was not known by everybody until reminded of it by Mr. L.

Ink—Vinegar—Humbugs.—Mr. Chas. C. Kulp, of Montgomery Co., Pa., sends the copy-righted, printed recipes, which some chap in Biddeford, Maine, is selling at a high price, claiming that they came from Brazil, that he has refused \$3,000 for the "right" to make them in New York alone, etc., etc. Mr. Kulp sends us recipes for the same things copied from his old scrap-book where they have been at least ten years, and they are almost identical with those which this Maine fellow has dug up, and is now selling to agents and others. We may add here, that many of the advertisements for "agents" at "\$100 a month," "employment at \$150 per month," etc., are from parties who have got some old recipe, quite likely taken from the *Agriculturist*, and giving it a new name, they persuade agents to undertake its sale as something of great value. A fellow recently advertised for agents, sent applicants a long circular to persuade them to buy a honey recipe, and rights to make it at \$5 each, and to all green enough to send him the \$5, he returned a sugar-honey, or artificial honey recipe, which we published many years ago with a caution as to its value. He probably got it from our columns.—Here

are Mr. Kulp's old recipes; purchasers of the Maine operators "right" will see that they are almost identical with those which have cost them \$2 to \$5.—VINEGAR: 40 gallons water, 1 gallon molasses, and 4 lbs. acetic acid, mix and let it ferment until it is strong vinegar.—INK: (a) 1 gallon hot water, 2 ounces extract logwood, ½ ounce bi-chromate of potash. Stir together and let it stand to settle, and strain. (b) Dissolve ½ lb. extract logwood in 5 gallons hot water, and add ½ ounce bi-chromate of potash; stir for a short time. Five gallons cost 25 cents. These recipes copied from a very old scrap-book, are as good (if good at all) as the \$5,000 recipe of the Maine man.

How they Cook Grouse in the Rocky Mountains.—An old prospector in the Rocky Mountains, writes us: "Perhaps you would like to know how we live out here. We are gourmands—Venison, bear meat, Grouse and trout, are our every day food. How do we cook? I'll tell you, and you'll say you have never eaten a Grouse if you take the trouble to try it. First, shoot your bird, and as soon as you pick him up, bleed him by an insertion of your penknife into his jugular. Being in camp for the night, dig a hole in the sand about 1 foot deep, and build a fire in it. When it is thoroughly heated leave it about ¼ full of coals, which cover well with ashes or very dry sand. Make a paste of mud or clay, in which encase your bird, leaving the feathers on, to the thickness of ¼ of an inch or so, and lay him in the hole, covering with ashes and coals, and filling up with dirt. After ½ of an hour, dig him out, and give him a rap on the ground, when the casing will fall off, taking with it feathers and skin, and leaving you the Grouse cooked in his own juices. Eat with 'hard-tack,' and tell Delmonico you have dined elsewhere. Perhaps I'll tell you how to cook a trout some day."

Cooking Salsify, or Vegetable Oyster.—We hope many of our readers have a liberal supply of this vegetable, or will have another year. It is grown as easily, and just like carrots or parsnips, and if lightly cooked affords a very agreeable dish, especially in spring. It is all the better for standing in the ground, as it grows all winter, although we usually take up late in autumn a quantity for winter's use, and pack it in boxes of moist sand in a cool cellar. We clean the roots well, cut in short pieces, boil tender, drain, salt it, add a little salt codfish picked very fine, and butter, thicken with a little flour and milk, and pour it over toast.—C. W. C., Howells, Orange Co., N. Y., writes: Wash and scrape the roots, cut in thin slices, boil in a little water until soft; pour off the water and mash the roots fine. Season with salt, pepper, butter, and a little cream.

Hop Culture.—Preston Miller, Dauphin Co., Pa. It is not practicable for us to reprint articles on special culture. In March, 1865, we published a prize essay, and have since issued a pamphlet (see Book-list) that contains about all that is known on the subject.

Our Rocky Mountain Friend on Trout.—"I promised to tell you how to cook a trout. You think you've caught trout in the streams that run among our dear old Green Mountains, or down the slopes of our Berkshire hills, but you must come out here to see the real fish. Everyone you hook, from 15 to 22 inches long, and as gamey as the shiest that hid himself under the old stump by the Alders, near home, years ago. There! you've landed him. Stick your knife in the back of his neck, and slash his gills the first thing. (Always bleed your fish as soon as you land him, it makes his flesh hard.) When you are ready for your supper, make a small incision at the throat, and draw the entrails. Then fill him up with a wedge of fat pork or bacon. Wrap him in several thicknesses of paper, well wet, (oak leaves will do), and lay him in the hot ashes, covering him well with ashes and coals. Leave him for from 20 minutes to ½ an hour, when you may unearth him, and eat with whatever accompaniments you may have. The first thing you'll do next morning, will be to go fishing.—There are other ways to cook him, but when you've eaten this fellow you won't care to know them."

Who Eats Sparrows?—These little birds are found, by the Maltese and Italian, to be most epicurean. They are best in the fruit season. Find a tree in which they roost, and by burning a little sulphur under it you may bag any quantity. Pluck and clean them. Lard them, or better still, pin across the breast a very thin slice of pork. Wrap them in young grape leaves, and put in the oven. When cooked, serve up in the center of a dish of boiled rice. Cover well with a rich tomato sauce. The grape leaf will be found an agreeable accompaniment. Other small birds are deliciously cooked in the same manner, and it may be particularly recommended for the "Reed birds" of the Delaware and Potomac, and "Rice birds" of the South.

The Ohio Pomological Society will hold its annual meeting at Zanesville, O., on the 4th, 5th, and 6th of the present month, (Dec.) The fruit growers of the Muskingum Valley propose to show those who come, some fine collections. There will be various reports, discussions, and a good time generally; besides a "visitation of orchards," which may be a very good thing to have for ought we know. We advise those of our eastern fruit growers who have never been to a western "fruit fight," to go and see the vim that these Buckeyes and Hoosiers put into their meetings, and when they come home not to forget to bring a little of the heaven with them.

An Abridged Manual of Grape Culture and Annual Catalogue, by J. H. Foster, Jr., Pomona's Home Nurseries, West Newton, Pa.—Formerly, a nurseryman's catalogue was simply an enumeration of the stock on hand, but within a few years they have taken the form of a manual or hand-book. The one of which we have given the title, contains quite full and well considered directions for the cultivation of grapes and other small fruits. It modestly enough does not pretend to exhaust the subject, but refers those who wish to know more, to larger treatises.

Fruit Growing for Stock Feeding.—George Neff, Monroe Co., Ohio.—If apples are abundant, and you have not help sufficient to gather them for market, or to make them into cider, it will of course pay to feed them to hogs, especially if they are sweet ones. Good, rich, early winter or late fall apples of high-toned yet subacid flavor, make the best cider, though a large admixture of sweet apples is no disadvantage, as it adds strength. So much for the general policy of raising apples to feed hogs—the least profitable way of disposing of them, provided you can do anything else with them. Perhaps some of our readers will give Mr. Neff, through the *Agriculturist*, their notions of the best way to feed apples to horses, cattle, sheep, or hogs, cooked or uncooked, with corn meal or other grain.

Osage Orange.—"Subscriber."—This will, no doubt, succeed in southern Pennsylvania. Seed is sown in spring. We cannot specify any particular seedsmen. All the principal dealers have it.

Good Books Pay.—Take any good book you please, for illustration. Let it be the "American Farm Book," for example. This contains a large amount of information, the best the intelligent author could collect, at the time it was written, by many months of careful thought and work. It discusses soils, their kinds, peculiarities, treatment, the various crops, describing each with engravings showing the plants themselves, the kinds of soil and manures best adapted to them, harvesting, etc. There are 325 pages of these thoughts and hints. Any one can, for \$1.50, have this book delivered to him at his own Post Office. Now we say, unhesitatingly, that there is not a cultivator on the face of the earth, no matter how experienced or skillful, or how ignorant, if he can read at all, who could take this book, and read it through, without getting hints, and having trains of thought started, that would, in the end, bring many times \$1.50 profit on the same amount of hard work. Take Herbert's Hints to Horsekeepers, costing \$1.75. No man owning a single horse can read that book, without getting hints that will make the use of that horse worth \$5 to \$50 more to him in the long run. The same reasoning applies to almost every book in our whole list (p. 426.) The truth is, one man's success beyond another's depends largely upon his *intellect*, his better understanding of his business, his better planning of his work, etc., and everything a man reads about his business, is disciplining and strengthening his mind, and furnishing material for thought. The more he reads and thinks, the better will be practice, and the better will he make his work pay. The above is a money view of the subject. There is a higher one. The more a man understands of the objects of his toil, the soil, its nature, the crops, their varieties, peculiarities, etc., the more he has to think about while at work, the happier he is, and the more elevated in the intellectual scale he feels himself. The influence upon the minds of his family, of his sons, and his daughters too, of having books to read that give character and dignity to their occupation, and awaken interest in it, is of great importance. So, we say, let cultivators and mechanics get and read all the books they can treating about their business. One acre less of land, put in good books, will make the rest of the farm pay much more profit.

Good Papers also Pay.—The above reasoning in regard to books, applies still more forcibly to good periodicals, that come to us fresh from month to month, and bring information up to the latest dates.

Mark All Subscriptions sent in, as New or Old.

TO-DAY

YOUR SUBSCRIPTION EXPIRES—unless it be one of the many thousands which have already been paid up for next year. (The reader will know how that is.) If it is yet to be renewed for 1867, it can usually be done as well

TO-DAY

as at any other time.—More than 100,000 subscriptions are still to be renewed, and reentered on our books. We want our old experienced clerks to do this as far as possible. It will be a *very great convenience* to us to receive renewals and new subscriptions the first of December. We can then arrange the names properly on the entry and mail books, write the wrappers, and send off the January number in due season. If, therefore, it be at all practicable, please send in your renewal, and any new names ready,

TO-DAY.

We trust it is needless to urge any reader to subscribe again. The present Volume speaks for itself. Its 452 ample pages, its multitude of Engravings, large and beautiful, its great amount of carefully prepared reading matter, its constant efforts to guard the interests of its readers, are more persuasive than anything the Publishers can say here. For the *Next Volume*, we can confidently promise even more. Increased experience and enlarged means and facilities will secure this. Every thing that untiring industry, and expense can do, will be done to make the first volume of the new Quarter of a Century one of extraordinary value to every reader.

Among other plans, we shall for volume 26 expend over

\$20,000

in procuring reliable, instructive, practical reading matter, and valuable engravings alone; *in addition* to the usual heavy cost of paper, printing, mailing, office, clerk-hire, etc., etc. The *best* information and illustrative engravings must and shall be obtained. Now, then, *every* subscriber will himself receive the full benefit of all this outlay of labor, thought, care, and money, for the whole of 1867,

FOR ONLY \$1.50.

Or, for \$1.25 if in Clubs of Four to Nine;
Or, for \$1.20 if in Clubs of Ten to Nineteen;
Or, for \$1 in Clubs of Twenty and upwards.

THE AGRICULTURIST is thus supplied to subscribers at just about the present cost of its printing paper and mailing. (The number of subscribers is so great that good advertisers willingly pay all the other expenses and profits.) Will it not be a favor to your friends and neighbors who do not know the fact, to explain to them where they can obtain so much for so little money? If so, please give them the information, and thus confer a favor both upon them and us. We want every body to have this journal who will be benefited by it.—As it will so greatly aid our work in this, our busy season, we again ask as a special favor, to have the renewals of subscriptions and new names, whenever convenient, sent in

TO-DAY

CLUBS Can at Any Time be Increased, by remitting for each addition the price paid by the original members, if the subscriptions all date at the same starting point. Or, the rates may be *decreased*. Thus, for example, any one sending 10 subscribers for \$12, may afterward add 10 names more for \$8, that is, 20 subscribers for \$20, and so of other club terms. Members of the same club may receive the paper at different Post-Offices. In Premium clubs are included all names sent by one person at different times, and from different places, if for the same volume of the paper, and if each list of names is marked "for premium," when sent in.

Receipts for Subscriptions Not Given.—It would be an immense work to send receipts for a hundred thousand subscribers. The paper is only sent so long as subscribed for, and its receipt is an acknowledgment that it is paid for. Those subscribing at the Office desk, will receive receipts when desired. Any one sending a subscription by mail, if particularly desiring it, can have a receipt returned, by enclosing a ready directed post-paid envelope, to forward the receipt in. A three-cent letter stamp is required on such envelopes.

A Gift Often Repeated.—Many this month send some token of regard to a son, brother, relative, friend, or neighbor. Will not the 26th Volume of the *Agriculturist* often be a most acceptable Gift? While appreciated at first, each successive number, as it comes through the year, will remind the recipient of the giver, and we are sure the volume will contain many things that will be pleasing as well as useful. In such cases of gifts, when desired, we will enclose in the first number forwarded, a subscription Receipt, noting on it the name of the one who paid it, as well as the name of recipient.

Bound Volumes—Covers for Binding.—As soon as this number is mailed, we shall bind up a supply of copies of this volume (25th), ready for those desiring them. They are bound in neat black cloth covers, with gilt title, complete index, etc., all in our regular uniform style. Price per volume \$2, or \$2.50 if to be sent by mail. Any of the previous nine volumes (16 to 24) furnished at the same rate. The volumes are supplied *unbound* for \$1.50, and 24 cents extra it to be sent by mail. Any single numbers, from No. 120 to No. 239 (Vols. 16 to 25, inclusive) supplied at 15 cents each. We print clean, new numbers, as needed, from our electrotype plates of these volumes.—Volumes sent to the office are bound in our regular style for 75 cents each, and missing numbers supplied at 12 cents each.—We have the regular form of Binding Covers or "jackets," for the above volumes, into which any book-binder can easily insert the numbers, and bind them at small cost. Price of covers 50 cents each; or 60 cents if sent by mail. See p. 429.

What is your P. O. Address?—It is strange indeed, that so many people omit their P. O. and State. We have received hundreds of letters, of which the following are examples: T. J. J., writes, wanting an early answer. His letter indicates "Mercer" inside, but is Post-marked Henderson. No State or date. Somebody sends us \$36, with names of subscribers to correspond, but there is no signature, and nothing to tell us from which of 20,000 Post Offices it came. We will keep it until somebody sends us for not sending on the papers. One man sent us a subscription letter and has complained three times, the last time bitterly, because we did not even respond; but not one of the four letters gives us any clue to his State. Will be please tell us both his State and Post Office, definitely. Here are envelopes directed to us, each containing money, but not a scrap of paper or writing. They are Post-marked: Pittsburg, Bath, Marlboro, etc... These are samples of sundry letters now in waiting.—**AGENTS:** If changes are to be made, we *must* know where the paper previously went, before we can transfer the address.

Clubs of Subscribers need not all be at one Post Office.—The reduction in price to clubs of four or more names, is partly made to encourage the getting up of large lists, and partly because it costs much less to mail a large number in one package. But we do not object to names added from other Post Offices, as such names usually soon become centers of other clubs. Names for Premium lists may also be gathered at any number of Post Offices, if all are sent by the same person.

Save the Index Sheet.—To save cutting out the threads, we print the Index and Title page of this volume on a second extra sheet, and put it in *loose*. Though more liable to be lost, it is in this form all ready to place in front of the January number, in stitching or binding the numbers of the volume. Some simple methods of doing this are explained and illustrated on page 439.

AMERICAN AGRICULTURIST.

ORANGE JUDD & Co., Publishers, 41 Park Row, N. Y. City.

ANNUAL SUBSCRIPTION TERMS (always in advance): \$1.50 each for less than four copies; Four to nine copies, \$1.25 each; Ten to nineteen copies, \$1.20 each; Twenty copies and upwards, \$1 each. Papers are addressed to each name.

Now for the Premiums In Earnest.

Canvassers for our excellent Premiums have been busy, but thus far mainly out on the "skirmish line," picking up new subscribers, of which about 25,000 have already been gathered, entitling the canvassers to nearly \$5,000 worth of desirable articles. Now begins the heavy campaign, as over 100,000 subscriptions expire with this number. The renewals of any of these when gathered by canvassers will count in their premium lists along with the new names already sent in, and those hereafter furnished. A little thorough energetic work now will gather names enough in almost every town to secure one or more of the valuable articles named in the table in next column. (For description of these articles, see October *Agriculturist*, or send for a printed Premium Descriptive List, which will be sent free to all applicants.)

Anybody can get a premium. Even if half a dozen start a club in the same place, there are usually people enough to furnish a premium club to each. Many small country towns and villages have 50 to 250 subscribers.

Most of those who have sent in premium lists thus far, have written in enthusiastic terms. Many have earned from \$10 to \$25 a day, in just such articles as they desired. See "what a young man did," on page 424.

Read Again the "Six Suggestive Questions" which were printed on page 384 of the November *Agriculturist*.

Note the bordered column, on page 425. Please let us have the names as fast as gathered. There will be a rush of work, at best, towards the end of the month. Send along the names now, and take any desired time to increase the list for a large premium, or more than one.

You can hardly Promise too much for our next volume. It shall be worth many times its cost to every subscriber, whether living in Country, Village and City.

The Paper is Good; the people are to be found who want it; somebody can get splendid premiums for finding them: may it not as well be you, as any one else?

Over 8000 Persons have obtained good premiums in past years, and many hundreds have already secured them this year. There is plenty of room for others to do the same thing. We are ready to send one or more premiums to each of the 25,000 Post-Offices in the United States and British America, if called for. Will you get one of them? It is easy to do so. Try it.

By Wholesale purchases, by advertising arrangements, etc., we can pay much more in premiums than in cash. Every article is given at the regular cash price.

Each article offered is for a definite number of subscribers; every one thus knows just what is required. A premium is not dependent upon favoritism, or upon what some unknown person elsewhere is doing.

About Nine Thousand Persons have so far received our premiums with great satisfaction; we have not heard of one in a thousand who has not been highly pleased.—It is a good work. The tens of thousands of persons persuaded by our canvassers to take and read the paper, have been benefited by so doing.

Many Clergymen are receiving the Cyclopedia, Sewing Machines, Melodeons, etc., as premiums. Some make up the subscription lists themselves, with the freely rendered aid of their congregations. Others receive the articles from their Parishioners who unite their efforts and make up a premium club of subscribers for the paper,

Table of Premiums and Terms, For Volume 26—(1867).

Open to all—No Competition.

No.	Names of Premium Articles.	Price of Premium.	Number Subscribers required at \$1.50.	at \$1.
1	Garden Seeds for a Family (40 kinds)	\$5 00	13	37
2	Flower Seeds for a Family (100 kinds)	\$5 00	13	37
3	Yarnery Stock (Any kind desired)	\$10 00	30	97
4	Iron Grape Vines (12 of No. 1)	\$10 00	30	97
5	Concord Grape Vines (100 of No. 1)	\$12 00	19	65
6	Japan Lilies (12 Bulbs)	\$6 00	15	45
7	Sewing Machine (Wheeler & Wilson)	\$35 00	60	240
8	Sewing Machine (Grover & Baker)	\$35 00	60	240
9	Sewing Machine (Singer's Tailoring)	\$50 00	86	320
10	Sewing Machine (Singer's)	\$63 00	70	270
11	Sewing Machine (Wheeler & Gibbs)	\$53 00	60	240
12	Sewing Machine (Horse's)	\$63 00	67	250
13	Washing Machine (Doty's)	\$11 00	21	70
14	Clothes Wringer (Best—Universal)	\$10 00	18	58
15	Tea Set (Libby's best Silver Plated)	\$50 00	66	245
16	Casters and Fruit Basket (do. do.)	\$30 00	41	140
17	Ice or Water Pitcher (do. do.)	\$18 00	25	85
18	One Dozen Tea Spoons (do. do.)	\$7 50	17	50
19	One Dozen Table Spoons (do. do.)	\$15 00	22	75
20	One Dozen Dining Forks (do. do.)	\$15 00	22	75
21	Pinna (Best Stealing & Son's 7-ounce)	\$100 00	520	1550
22	McIntosh (Best 3-ounce)	\$112 00	138	490
23	McIntosh (Best 3-ounce)	\$87 00	75	285
24	Ladies' Gold Watch (Beautiful)	\$100 00	130	490
25	Silver Watch (Valuable Time Keeper)	\$32 50	48	158
26	Double Barrel Gun (Very good)	\$30 00	46	150
27	Spencer's Breach-loading Rifle (Hunting)	\$55 00	70	275
28	Tool Chest (First Quality of Tools)	\$14 50	60	190
29	Case of Mathematical Instruments	\$20 00	18	55
30	Case of Mathematical Instruments	\$15 00	22	75
31	Morton's Best No. 6 Gold Pen (Silver Case)	\$5 75	14	42
32	Morton's Best No. 5 Gold Pen (Silver Case)	\$1 50	11	35
33	Barometer (Woodruff's Meteorical)	\$18 00	27	90
34	Barometer (Woodruff's Meteorical)	\$12 00	19	65
35	Bicycle Mowing Machine, No. 2	\$125 00	150	450
36	Allen's Patent Cylinder Pump, etc.	\$20 50	31	100
37	The Aqueduct or Water Throater	\$11 00	19	65
38	American Cyclopedia (Appleton's)	\$50 00	96	325
39	Worcester's Great Illustrated Dictionary	\$12 00	19	65
40	Any Back Volume <i>Agriculturist</i>	\$1 75	20	70
41	Any Two Back Volumes do.	\$3 50	29	95
42	Any Three do. do.	\$5 25	13	38
43	Any Four do. do.	\$7 00	17	47
44	Any Five do. do.	\$8 75	17	54
45	Any Six do. do.	\$10 50	19	61
46	Any Seven do. do.	\$12 25	21	68
47	Any Eight do. do.	\$14 00	23	74
48	Any Nine do. do.	\$15 75	25	80
49	Tols. XVI to XXI	\$17 50	27	86
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67	A \$30 Library do.	\$35 00	50	162
68	A \$35 Library do.	\$40 00	55	177
69	A \$40 Library do.	\$45 00	63	192
70	A \$45 Library do.	\$50 00	68	207
71	A \$50 Library do.	\$55 00	75	237
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Every article offered is new and of the very best manufacture. No charge is made for packing or boxing any of the articles in this Premium List. The forty-three Premiums, Nos. 1, 2, 6, and from 29 to 32, and from 40 to 75 inclusive, will each be delivered FREE of all charges, by mail or express, to the Post-Office or express office nearest recipient, to any place in the United States or Territories, excepting those reached only by the Overland Mail.—The other articles listed the recipient only the freight after leaving the manufactory of each, by any conveyance that may be specified.

We take so much pains to procure only good articles in all cases, that any one securing anything from our premium list, saves the risk usually run of getting poor or indifferent goods, when buying of unknown or irresponsible parties. Every thing we send out as a premium is guaranteed to be the best of its kind and price.

Our premiums are standard articles, and enough can be obtained to supply all calls for premiums for six months. Every canvasser can take abundant time, but

As fast as subscriptions are obtained, send them along, that the subscribers may begin to receive the paper; and when all the names that can be obtained are forwarded, select the premium, and it will be promptly furnished. To save mistakes and keeping accounts, send with each list of names, the exact subscription money (in Post Office money orders, drafts or checks on N. Y. City; or, if these can not be had, register money letters.)

Every name designed for a premium list must be so marked WHEN sent in. (We can not count others.)

Old and new subscribers count in premium lists, but a part should be new names, for it is to obtain such that the premiums are in part offered. Papers to Premium clubs need not all go to one Post Office. Of course the extra copy, usually offered to clubs of ten or twenty, will not be furnished when a premium is called for.

Specimen Numbers of the *Agriculturist*, Cards, and Showbills, as may be needed, will be supplied to Canvassers. These should be used carefully and economi-

cally, as each extra copy of the paper with postage (2c.), which must be pre-paid, costs about 12 cents.

For Full Description of the several premiums see October *Agriculturist*, pages 349 to 352, or apply for a Descriptive List, which will be furnished free. We have room here for only the following:

No. 63 to 74—Good Libraries.—These can be selected by the recipients, from any of the books in the list below. The books will be delivered free of cost, by mail or express.

No. 75—General Book Premium.—Any one not desiring the specific Book premiums, 63 to 74, on sending any number of names above 25, may select Books from the list below, to the amount of 10 cents for each subscriber sent at \$1: or to the amount of 30 cents for each name sent at the (ten) club price of \$1.20 each: or to the amount of 60 cents for each name at \$1.50. This offer is only for clubs of 25 or more. The books will be sent by mail or express, prepaid by us.

No. 76 (New)—Sewing Machine.—Owing to a chance failure to meet the Proprietors, we were not able to include the Finkle & Lyon Machine in our previous premium list of valuable Sewing Machines (Nos. 7 to 12). We are happy to announce now that this too is open for selection (See table). We know it to be a good machine, from the long experience of a sister, and of several neighbors, and we have recently been trying it in our own family with much satisfaction. All we said in October (page 360) applies equally to this machine. It will be noted that we offer the \$60 machine. For further particulars, or descriptive circulars, send to Finkle & Lyon Sewing Machine Company, 587 Broadway, N. Y. City; or 89 Washington St., Chicago.

BOOKS FOR FARMERS and OTHERS.

[For sale at the Office of the *Agriculturist*, or they will be forwarded by mail, post-paid, on receipt of price. 27¢ All these are included in Our Premiums, Nos. 63 to 75 above.]

Allen's (H. F.) Rural Architecture	\$1 50
Allen's (H. F.) American Farm Book	1 50
Allen's Diseases of Domestic Animals	1 00
American Bird Fancier	80
American Rose Culturist	30
American Weeds and Useful Plants	1 75
Architecture, by Cummings & Miller	1 75
Berry's Fruit Gardener	1 25
Benett's Poultry's Companion	2 00
Benett's Rabbit Fancier	30
Breck's New Book of Flowers	1 75
Bulst's Flower Garden Directory	1 50
Bulst's Family Kitchen Gardener	1 00
Burr's Vegetable and American	5 00
Chorlton's Grape-Grower's Guide	75
Cobbett's American Gardener	75
Cole's (S. W.) American Fruit Book	75
Cole's Veterinarian	75
Daddy's Modern Horse Doctor	1 50
Daddy's (Geo. H.) American Cattle Doctor	1 50
Dana's Animal Manual	1 25
Dog and Gun (Hooper's) paper, 30c. cloth	60
Downing's Country House	8 00
Downing's Landscape Gardening (new Edition)	6 50
Downing's Fruits and Fruit Trees of America	3 00
Downing's Rural Essays	5 00
Eastwood on Cranberry	75
Elliott's Western Fruit Grower's Guide	1 50
Flax Culture	50
Field's (Thomas V.) Pear Culture	1 25
Flint's Milch Cows and Dairy Farming	2 50
French's Farm Drainage	1 50
Fuller's Grape Culturist	1 50
Fuller's Strawberry Culturist	20
Gray's How Plants Grow	1 25
Gray's Manual of Botany and Lessons in one Vol.	4 00
Guenon on Milch Cows	75
Harris' Insects Injurious to Vegetation, plain 4.00, col'd	5 00
Harris' Rural Annual. Bound, 8 Nos., in 2 Vols. Each	1 50
Herbert's Hints to Horsekeepers	1 00
Hot Culture	40
Husman's Grapes & Wine	1 50
Johnson's Agricultural Chemistry	1 75
Johnson's Elements of Agricultural Chemistry	1 50
Johnson's (Prof. S. W.) Essays on Manures	1 25
Langstroth on the Honey Bee	6 00
Leitch's How to Build Hot-houses	1 50
Leitch's Illustrated Horse Doctor	2 50
Mayhew's Illustrated Horse Management	3 50
Mayhew's Practical Book-Keeping for Farmers	90
Blanks for do. do.	1 20
Miles on the Horse's foot	75
My Farm of Edgewood	1 75
My Vineyard at Lakewood	1 25
Norton's Scientific Agriculture	75
Onion Culture	20
Our Farm of Four Acres (bound) 60c. (paper)	50
Pardee on Strawberry Culture	75
Peat and Its Uses, by Prof. S. W. Johnson	1 25
Pedler's Land Measurer	1 60
Quincy's Mysteries of Bee-keeping (new)	1 50
Randall's Sheep Husbandry	1 50
Randall's Fine Wool Sheep Husbandry	1 00
Rivers' Miniature Fruit Garden	1 00
Richardson on the Dog, paper 30 cents, cloth	60
Rural Annual (by Joseph Harris)	25
Saunders' Domestic Poultry (new), Paper, 40 c., bound	75
Selbach's Gardener's Text Book	75
Seribner's Ready Reckoner	50
Skiffel's Housewife	75
Stewart's (John) Stable Book	1 50
Thompson's Pood of Animals	1 00
Tobacco Culture	25
Trot's (J. V.) Poultry (new)	1 50
Warder's Hedges and Evergreens	1 50
Watson's American Home Garden	2 00
Woodward's Country Homes	1 50
Yonatt and Spooner on the Horse	1 50
Yonatt and Martin on Cattle	1 50
Yonatt on the Hog	1 00
Yonatt on Sheep	1 00
Yonatt's Household Science	2 25

The White-haired Porcupine.

Erethizon dorsatus.

Among the great family of *rodents*, which includes rats and mice, rabbits, squirrels, marmots, etc., there is no group of genera more interesting than the porcupines. We have two which are quite common in this country, the White-haired Porcupine, which inhabits the Northern United States and Canada, and the Yellow-haired Porcupine which is found in the region of the upper Missouri, and in the Pacific States. The former is probably familiar to most of our readers. It is an animal about 2 to 2½ feet long to the tail which is 7 to 10 inches in length. It weighs 20 to 30 pounds. The head is short and flat, and the spines are partly concealed in its coarse hair. It has soft fur next the skin, of a brown color,

and mingled with coarse hairs with white ends, giving it a greyish look, which is lightened by the spines. These are white, with dark, barbed points, 2 to 3 inches or more long, erectile, and easily shed and renewed. The animal may be able to loosen them somewhat, at will, but the idea that it can shoot, or throw them even a short distance, is absurd. It is extremely sluggish in its motions, and when attacked neither attempts to escape nor shows fight, but with a succession of quick sideways motions, makes it dangerous for any animal to touch it. The erected spines, barbed at the end, will stick into the mouth or other part of the body, and hold there, working in deeper and deeper, so that dogs, wolves and lynxes, are sometimes killed by the irritation and inflammation consequent. The animal climbs readily, and feeds upon fruit, twigs, leaves, and the tender inner bark of trees. When numerous they are said to do great damage to the elm and basswood trees, girdling and barking the limbs or trunks so that the trees die. The creature is held in no favor, being in all respects a nuisance, and to none more so than to the owners of fine hunting dogs, which it often spoils. The Indians hunt them, using them as food, and employing the spines, which they usually color brilliantly and cut in small pieces for use, as beads, to ornament

leggings, mocassins, canoes, baskets, trinkets, etc.

This animal is frequently called *Hedgehog* in America, especially by people of New England origin, and that the incorrectness of the appellation may be the better seen, we give a picture of the Hedgehog of Europe (*Erinaceus Europæus*). This little animal is common through-

of the body; the belly is covered with whitish fur. The Hedgehog is easily domesticated, and does good service in cellars, kitchens, out-houses, and gardens, eating cockroaches, beetles, etc., etc., driving away mice, and ridding the garden of snails and grubs. Its habits are nocturnal, and it hibernates during the winter, sleeping in a nest of hay and leaves in some hollow log or heap of stones.

Hints on Improving the Land.

Money properly used is the source of many of the comforts of life; hence the great end of farming is to make money. It is not to embellish the land, to build fine houses, barns and fences; to raise fancy stock, or in any other way to make a show in the world. It is to make money, to acquire property, with the ultimate view of taking the comfort of it. The grand question is, how can a farm be

Fig. 1.—WHITE-HAIRED OR CANADA PORCUPINE.

out Great Britain, and the Continent of Europe. It is very different from our Porcupine in every respect, except that it is a quadruped armed with spines. It is an insect-eater, closely allied to the moles and shrews, though it is said to eat some kinds of fruit, and it is well known as a destroyer of mice, snakes, and toads, worms, snails, etc., devouring birds' eggs also, and small birds. It is only about 8 or 10 inches long, and has a slender snout, fringed at the

rendered the most profitable? And the answer is, first and last, by improving the soil so as to make it most permanently productive. The great defect of American farms, at least this side of the Alleghanies, is their impoverished condition. They have been cropped and re-cropped, their products sold, and but little returned to the land to keep up its fertility. Any body can see that the net products of a farm which yields 50 bushels of corn to the acre, are much greater than one which gives 40. For, if 30 bushels will pay the expenses of tillage, there is a profit on the former of twenty bushels, and on the other of only 10. Supposing this to hold good on all the crops of the farm, is not one acre of this first farm worth two of the second? In whatever way we can increase the income of the land above the expenses, we gain so much more profit, and this decides the value of the farm. If land which gives a clear gain per acre of \$7, is worth \$100 to the acre, then that which gives \$14 gain

is worth full two hundred dollars per acre. It costs nearly as much to till land which yields only a profit of \$3.50, as that which yields \$14. Why not, then, apply the extra manure, and the extra brain-work, and get the \$14? The first man barely gets a living; the second grows rich. The best agriculturists here and in England, have found out this true prin-

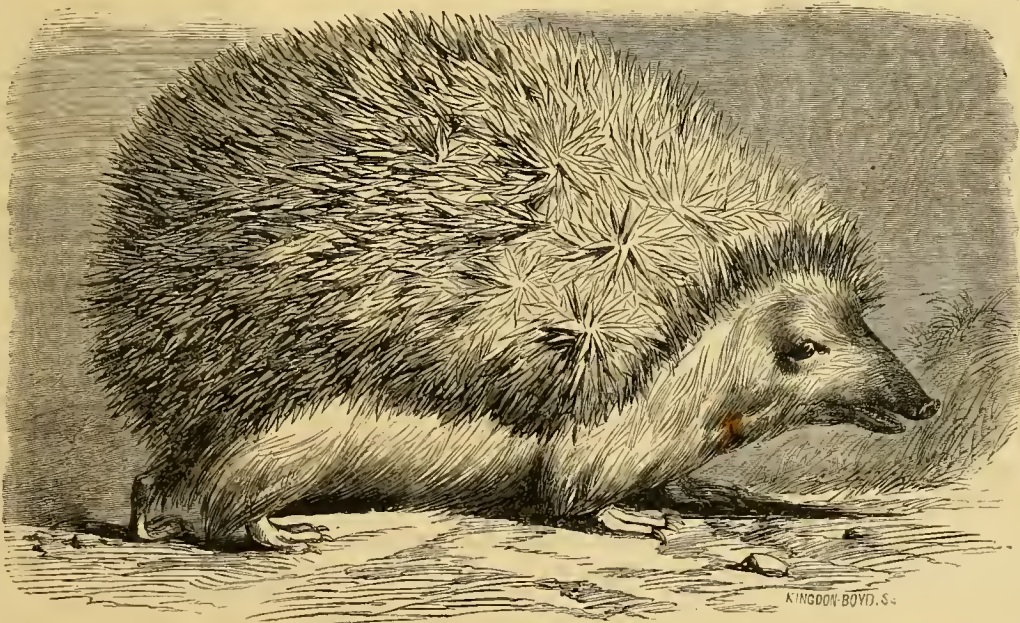
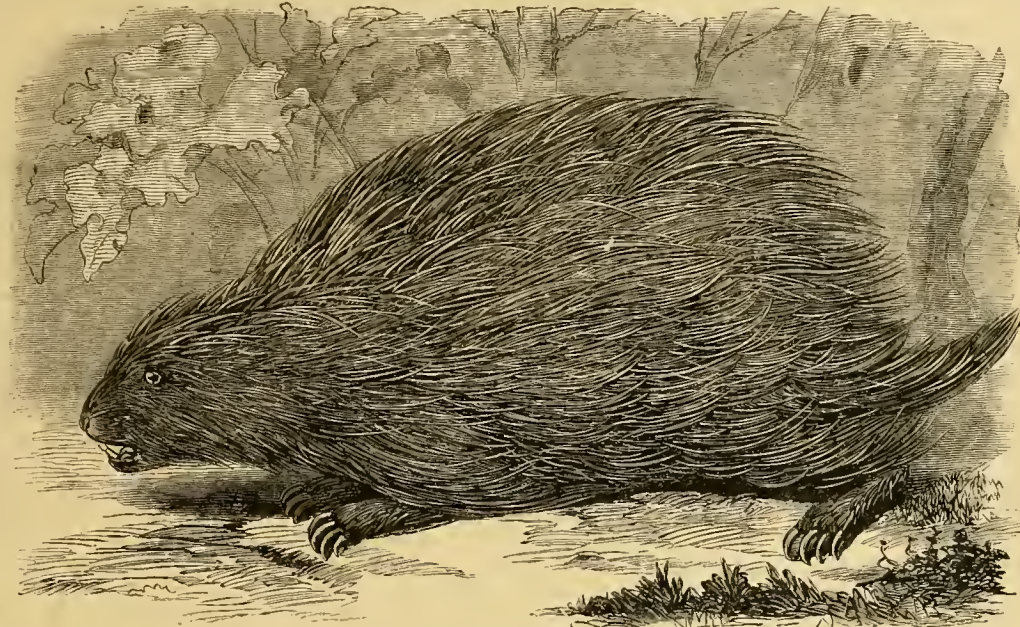


Fig. 2.—EUROPEAN HEDGE-HOG.

end. When attacked or alarmed, it rolls itself into a ball, presenting only its spiny back to its foes. The muscle by which it does this underlies the skin where ever the spines are, and the motion erects the spines and holds them firm. The spines are about an inch long, of a dark brown color, tipped with white, and arranged in clusters, covering the upper surface and sides

ciple, and it is the key to their success. They make it a settled, invariable rule, to enrich the land, in proportion as they crop it, and to invest their surplus money in the soil if they can be sure of a fair interest for it.

And this brings us to the old question, how to enrich the soil? Few farmers have the means to bring up their lands at once. When the land-holder and his land are both poor, the farmer is in a pretty tight place. There is so little to begin with. The great reliance must be on the barn-yard, pig-pen, poultry-house, privy and green crops, and the muck bed.

By some means, let him contrive to raise more grass and fodder crops; this will enable him to keep more stock, and this, of course, brings the increased manure. By buying a few extra tons of manure to start with, this will give the first increase in the grass, and so the ascent will surely follow. Grain and root crops will then come in for a share of the land, and produce a share of the profits. The importance of draining, of deep plowing, etc., we need not now dwell upon. No good farmer will neglect them. It must also be understood, at the outset, that the work of renovating an old worn-out farm is the work of years, and must be prosecuted with patience.

Walks and Talks on the Farm.—No. 36.

I made a great mistake in not cutting up my corn immediately after the frost. It was hardly glazed, but the frost was so severe that there was no probability of its ripening any better for being left standing. I cut up about three acres and intended to have finished the field. But the beans wanted pulling, the clover seed had to be cut, the potatoes on the low land were rotting, and what few apples we had needed picking. And extra hands were more difficult to get than I ever knew. Labor was at a premium. Everybody wanted men and bid high to get them; and it seems as though the scarcer men are, and the more you pay them, the less they do. I have been paying \$1.50 a day for men, \$1.00 for women, and 50 cents a day for boys, and at this season they do not average more than nine hours a day.

No, we cannot afford to pay such wages; but what can we do? It is better to pay them than to let the crops rot in the ground. And then, everything is high that the men have to buy, and judged by this standard, wages, after all, are not much, if any higher, than before the war. I should not complain if they *would only work*. Our National debt and high taxes must be paid out of the industry of the nation. We shall all be obliged to work harder; but few will do it until compelled by absolute necessity.

Well, I stopped cutting the corn in order to pull the beans. These I was fortunate in securing in capital order. We have had glorious weather. Nothing could be finer. But one night we had a sharp frost, and a few potatoes that were exposed in the hill were nipped a little. The next day all my Dutch hands, men and women, stayed at home to dig their own potatoes. For more than a week none of them came to work. Then one of my own men who is engaged by the year was taken sick, and I could do little but worry and fret. The result was that my corn was not finished cutting until about the first of November. In the meantime, we had a high wind, and the corn stalks being very dry it stripped off the leaves, blew down the stalks—making it tedious work to pick up

and cut up the corn,—and destroyed the best part of the fodder. I shall know better next time. I should have cut up the corn at once, and stuck to it until it was done, no matter how pressing other matters were.

I am now paying six cents a bushel for husking, and may have to pay more, but I am tired of bidding high in order to secure men. It is of no use. I saw at the State Fair a husking machine that did the work admirably, and I hope by another season it will be generally introduced. If there ever was a time when "labor-saving machines" were needed, it is now.

My potatoes are all dug. My Flukes on the low land were more or less decayed, but the yield was good. The Peach Blows on the low land were sound, but the yield was very light. The hot, cold weather in August checked their growth, just at the time when dry, warm weather was most needed. The Flukes, being two weeks earlier, suffered far less. On the dry upland, the Peach Blows were excellent in quality, but there were more small potatoes than there should have been. As it was, however, the yield was very fair. I did not measure the whole, but I measured off seventy yards of one row and found it gave 4½ bushels, full measure. And as the rows are 3 feet 4 inches apart, this is at the rate of 294 bushels per acre.

The crop, in this section, as a general rule, turns out much more than was anticipated from the growth of the vines in summer. Mercers have rotted badly, and the Peach Blows are not as large as usual, though sound. Farmers expect good prices for potatoes in the spring. They argue that as New York has hitherto received large supplies from Nova Scotia, and as there is now a duty on them, we ought to get the benefit of it. Everything else is high, and the consumption of potatoes this winter, while they are cheap, will be greater than usual, and create an active demand in the spring.

I am trying to buy some sheep to fatten this winter, but they are higher here than in New-York. Grain is advancing, and John Johnston says he has always found most profit in fattening sheep when grain was highest. The reason of this of, course is, that farmers hesitate to feed grain when they can sell it at a high price. Few sheep are fatted, and consequently in the spring they command high prices. The profit of fattening sheep in winter is not due so much to the increase in the weight of the sheep, as to the improvement in the quality of the mutton, and to the increase in the price per lb. Last winter there was no money made in fattening sheep. The price in the fall was as high as in the spring, and the sheep did not pay for the food consumed. He was fortunate who obtained reasonable pay for the food, and got the manure for his trouble.

One of my neighbors has sold his farm for \$100 an acre. On asking him how he came to sell, he replied, "I am going West, and intend to buy a small farm that I can work alone. *I am tired of paying hired help two thirds of all I can raise.*"

I told him I should be quite contented to do so, provided I could raise enough. Thirty-three per cent. profit would do very well. A friend of mine who lives in the city and rents out a farm on shares, says he should be perfectly satisfied if the man would only steal one-quarter more than his share; but he *steals the whole!* Shall we ever be able in this country to carry

on farming in the same way that other business is conducted. I do not mean amateur farming, but real, practical farming, with an experienced man to direct and furnish the capital, and others to do the labor? It must be confessed that there are few instances of success in this direction, and many of failure and disgust. The general opinion among practical farmers is, that such a system cannot profitably be carried out. And the majority of them think that a farmer who pays two-thirds of all he receives from his crops for hired help and expenses, will soon get tired of agriculture. A man who undertakes the business and who has the necessary personal qualifications, with sufficient capital, can usually carry on a manufacturing establishment with profit. Why cannot farming be carried on in the same way. If it cannot, it must be owing to the difficulty of getting intelligent labor, or of making it, from the nature of farming, efficient. If this is really the case, we must have small farms, and much of the work must be done by the farmer himself and his family. It would seem difficult to have a high order of farming on this principle, or to use machinery to advantage.

What proportion of the money obtained for the produce of a farm is expended in labor? The late John Delafield, kept accurate accounts of his receipts and expenses on his farm of 350 acres, near Seneca—273 acres under cultivation, and 77 acres woodland, for five years, from 1847 to 1851. The income from all sources in 1847, was \$3,044.05, and the amount paid for labor, \$804.62, or about 26½ per cent. In 1848, it was 31 per cent., and 1849, 29 per cent. In 1850 (the receipts being \$3,338.88), it was only 21 per cent. The average cost of the labor was about 40 cents per day.

At the present time, labor is about 2½ times as high, and produce, on the whole, is also about 2½ times as high as at that time. If our crops were as good now as then, this would do very well. Instead of receiving \$3,000 from the farm, the sales would amount to \$7,500, while the labor, instead of costing \$800, would cost \$2,000. The profits in the one case would be \$2,200, and in the other, \$5,500—or 2½ times as large. "Other expenses" would probably be about 2½ times as large now as then. If it took *all* the balance then and now, there is no difference. If anything was saved, there ought to be 2½ times as much saved now. The present high prices do not help a poor farmer at all—it is only the good farmer, who receives more than he spends, that derives any benefit.

The prices obtained in those days read oddly enough at the present time. Thus one item of the receipts is: "6 pigs.....\$3.00."

The same pigs, say six weeks old, would now bring \$15. I know of a litter that were sold at two months old for \$5 each, and I sold some myself at \$4.00. It is not many years ago since such pigs could have been bought in the fall at from 50c. to \$1.00. Milch cows have advanced almost as much. At an auction sale near here a few days since, the cows brought over \$100 each, and one ran up to \$125. Before the war, \$30 to \$40 would have been a good price for such cows in the fall. The advance on beef cattle is not as great as on milch cows. Sheep, mutton, wool, buckwheat and potatoes are now comparatively low. Sixteen years ago I sold good cider for \$1.00 a barrel. It now is \$10.

There is one cause of high prices of farm produce, which is seldom alluded to—the increase in population. It is said that, from the

partial returns of the census of 1865, taken by the States, the indications are that we have now a population of *forty-five millions!*

In 1860 the total population of the country was not quite 31½ millions, and in 1850 23 millions. From 1850 to 1860, a period of profound peace and prosperity, the increase in our agricultural products barely kept pace with the increase in population. And taking the country together—North and South—it is very doubtful if our aggregate production is any greater than in 1860, and yet we have forty-five millions of mouths to fill instead of thirty-one or two millions. In 1860 the Southern States produced nearly as much wheat, in proportion to population, as the Middle States, and *three times as much corn*. It is reasonable to suppose that their productions have fallen off greatly during the war. In 1860, the New England and Middle States did not raise enough produce for home consumption, and the deficiency was made up from the West. At the present time, the New England, Middle and Southern States must all more or less look to the West to make up their deficiencies. If we have a population of forty-five millions, and if it keeps on increasing at this rate, the farmers of the United States must bestir themselves, or we shall come nearer to a *famine* than was ever dreamed possible in a country where land is so abundant.

The fact is, farmers, until within a few years, have not received prices high enough to induce them to adopt an improved system of farming. They have been obliged to rely to a considerable extent on the native fertility of the soil, and could hardly afford to spend much labor or money in applying manures. But this state of things is rapidly passing away. Prices are now high enough to warrant high farming, and he is a fortunate man who has a farm in a high state of cultivation, capable at once of producing good crops. A poor crop takes nearly as much labor to raise and gather it, as a good one, and the profits are all eaten up by the high wages, while the good crops leave a handsome balance. Look at the situation from what point we may, one fact is prominent—the *necessity and the advantage of improved farming*.

We need more capital—or rather, perhaps, we need faith enough in good agriculture to use what we have, in improving our farms. Had the millions of dollars which have been sunk in oil wells, been invested in underdraining and other improvements, how much better it would have been for the country! Those who complain so loudly of high prices of farm produce, should know that the absorption of capital for speculation is one cause of the present scarcity of the necessities of life. The farmer needs capital to carry on his business as much as the merchant. But as things now are, it is rare that he gets any accommodation from the Banks. The necessity of capital among farmers is seen in the fact that at auction sales, where nine months on a years' credit is given, prices go far higher than at cash sales. There are few farmers who have anything like the amount of capital that they could use to advantage. We invest our money in buying the land and have not enough left to farm it properly. One reason of the high position occupied by English and Scotch farmers is, that their means are not locked up in the land. This is owned by the large landlords, while the farmer has all his capital free for active employment. Had he money enough to own the land and farm it too, he would probably feel that he was rich enough "to live without work," and the farm would

soon run down. Of course I do not advocate this system of renting farms. It is far better to own them, but it involves the necessity of obtaining more capital for active use. A merchant worth ten thousand dollars would probably borrow, directly or indirectly, twenty thousand in addition to carry on his business. He gives notes at four or six months to those who sell him goods, and takes notes from those to whom he sells, and *gets them discounted at the bank*. And in this way an enterprising merchant sometimes borrows three or four times as much money as his original capital. This is all very well. The business of the country could not be carried on without credit. But how is it with farming? A farmer worth \$10,000, which he is not risking in business, seldom uses his credit at all. He is "good," but the banks will not accommodate him, *because he requires the money for nine months or a year*, and the banks can make more money on shorter paper. This is the real difficulty in the case. The farmer can seldom turn his money to advantage in a shorter time, and he is not safe in giving three months' paper, which must either be renewed when it comes due, or he must sacrifice something to meet it. There is probably no remedy for this state of things, except in a superabundance of capital seeking investment at a low rate of interest, conjoined at the same time with a better knowledge on the part of bank managers with the business and wants of farmers, and confidence enough on the part of farmers themselves to employ money in a better system of agriculture.

"But farmers are producers, and should not be under the necessity of borrowing money to carry on their business, like those engaged in buying and selling." This is true, in one sense. But farmers are traders as well as producers. If I raise a litter of pigs, and at weaning time sell them for \$2.00 a piece, or if I raise a crop of corn and sell it for \$1.00 a bushel, I am so far a producer. I have produced these articles and sold them and got the money. But if instead of selling them, I feed out the corn to the pigs, and keep them six months, and then sell them, I am in one sense a trader or a manufacturer. The pigs and the corn are the raw material out of which I manufacture pork and manure. It is for this that I am warranted, on the ordinary principles of business, to borrow money from the bank. If I sell the pigs and the corn to a distiller instead of fattening them on the farm, he borrows money from the bank, and no questions are asked. Look at the thousands of half-fat cattle that are sold in our large markets every week. Would it not pay the farmer to get them in "ripe" condition before he parts with them? Frequently he has the food to do it, but either lacks confidence to feed it out, or else is pressed for money, and not being able to borrow, must sacrifice his cattle to his own loss and the loss of the community. He loses half the benefit of all his feeding, for in fattening cattle the last month gives the profit.

Rats are a great nuisance. My pig-pens and buildings are overrun with them. I often wish for a pair or two of ferrets and a couple of good terrier dogs. We could have some glorious sport. When I was a boy, in England, I used to keep ferrets, and can well remember many days when I was too sick to go to school; but cannot re-call a day when I was not well enough to go "a ferreting!" We used to stack nearly all our grain, and as it was never threshed until the winter, and frequently not before the next

summer, the stacks that were on the ground were a favorite haunt for rats. I have seen old stacks that were completely riddled with rat holes—sides, top, and bottom. Such a stack afforded real sport for us youngsters. Armed with a good stick, we stood one on each side of the stack. The ferrets, having been fasted over night, were turned into the holes. They would creep along there slowly at first, but as soon as a rat was scented they were more active, and when the game was fairly started Master Rat, or Madam, must make good pace to save their skin. With a rush he leaps from the stack, when a terrier makes short work of him. When the sport is lively, half a dozen or more are on the ground at once, and dogs and boys have all they can do to attend to them. We did not muzzle the ferrets when hunting rats—only when hunting rabbits. It is seldom that an old rat allows himself to be caught. Sometimes the ferrets catch a young one and may lie in the stack. But rats are not a favorite food of ferrets. They seldom eat anything except the blood and the head and neck, and there is little risk of losing a ferret when hunting rats.

The smaller the ferret the better, as she can follow the rats more easily and rapidly through the holes. The large male ferrets are seldom as good rat catchers—or more properly, rat *frighteners*—as the small female ferret. We used to buy them for about a dollar a piece, sometimes for half a dollar. If kept perfectly clean and in a warm but well ventilated pen or box, and fed regularly with a little new milk and scraps of fresh meat, birds, heads of chickens, blood, etc.; there is no difficulty in raising them. The only disease that troubled them was the foot-rot, from neglect to keep their pens clean and dry.

Why cannot we keep ferrets in this country? The only difficulty I can think of is our severe winters. But it would seem that this could be overcome by keeping them in a barn cellar and furnishing them with plenty of dry bedding, in which they can burrow and form a nest.

Perhaps, as the *Agriculturist* suggested a month or two ago, there are American varieties of the ferret that could be domesticated, and which would stand our climate better than the imported ferrets. The subject is worthy of attention. Rats are getting to be such a nuisance that something must be done to destroy them.

I see ferrets are advertised in the *Agriculturist* last month at \$20 a pair! When I was a boy I frequently raised seven, and in one case nine at a litter, and used to feel rich when I could sell the young ones for \$1.50 per pair. They breed twice a year; and some of our young farmers' sons, especially in the milder sections, would find a pleasure and profit in keeping them.

Stone Walls—Raised or Sunken Foundations.

Judge McVean, of Wheatland, whose name was printed McLean in the Sept. No. (page 318), sends us the following letter describing his method of raising the mounds upon which his walls stand. The objections of our correspondents are mainly, if not altogether, set aside by knowing accurately how the work is done.

* * * "I assume that the essential thing is to secure a dry foundation by elevation; or to protect it by depression below the action of frost. The latter has been practiced here to some extent, but space at present limits me to treat of the first mode only. The first person here who adopted this plan was David McVean, about 30

years ago. We made a radical mistake at first in building our mounds so narrow that they gave way at the sides and failed to support the wall. A finished wall on this plan requires some 3 feet to stand on, a moderate slope of $2\frac{1}{2}$ feet on each side to the ditch, with an elevation of at least 1 foot above the general level, under the wall, being a mound of 8 feet in width. The ditches (which with the slope should be well seeded while the ground is pliable) will each be some 3 feet wide, thus with the mound breaking the surface 14 feet wide. This looks formidable, but can not be helped. One can not judiciously plow nearer than $2\frac{1}{2}$ feet to any wall or fence. The ditches are invaluable to drain the wall, and frequently the adjoining land, and to carry off the spring snow banks, while the grazing is not lost. To make the mound, turn two heavy furrows 8 feet apart inward toward the line of the wall, leave them undisturbed, within this space you have 6 feet, into which throw the subsequent furrows one at a time, with forks and shovels. It is surprising how quickly and cheaply four men will raise a mound. I build on it when freshly made, throwing 2 inches of earth against the bottom stones, and seed down. More earth than this prevents drainage, and makes a trough to hold water.

On such mound we build a wall from 30 inches to 3 feet wide at bottom, according to the size of the stones, and 12 to 14 inches at the top, with a height of $3\frac{1}{2}$ feet besides the caps, which superadded make the height 4 feet or more. It has been my practice of late, when the ground is clear, to build such mounds for rail fences, believing that it will pay for this purpose only, as with the increased protection of the ditches, rails enough may be saved to pay its whole cost; besides, it is ready for a wall at any future time. The mound should be of such slope, and the ditches of such width and depth, that one can drive upon it with a stoneboat, which in case of heavy loads may be facilitated by throwing 2 or 3 rails into the ditch. The elevation of the mound and the depression of the ditches amount to at least 18 inches. When an animal approaches it with evil intention, his hinder feet being in the ditch, his body is out of balance. I have never known a horse to break it over with his neck and chest. An educated sheep will jump any stone wall, and for division walls we sometimes put in light posts 7 feet apart, and nail on one board above the wall; this requires less stone. It is not my purpose to depreciate or object to any other mode, but only to offer some suggestions in regard to this, and I am glad to see that the subject is being canvassed in the *Agriculturist*. Some ten years past, Hon. A. B. Dickinson, of Steuben Co., in a series of most valuable articles recommended, among other things, a system substantially like this. It would be interesting to know what his views are now."—Will Mr. D. please respond.

Extension Ladders, Fruit Ladders, etc.

Mr. Hosea Barnes, of Kenosha Co., Wis., furnishes the readers of the *American Agriculturist* with the following description of an excellent ladder of his invention: "In a recent number of your paper, I notice illustrations of ladders. Having invented, made, and used one which appears to me to be better adapted to farmers' use than any I have seen illustrated in that or previous numbers, I send you two hurried sketches, which will serve to make my description intelligible. The ladder is made in three lengths. The middle one is just wide

enough to fit nicely between the sides of the lower one, to which it is attached by means of slots 4 inches in length, the centres of which are $14\frac{1}{2}$ inches from the lower end of the middle ladder, and through these the upper rung of the lower length passes. Slots, $2\frac{1}{2}$ inches in length,



Fig. 1.—JOINTED LADDER.

are cut in the bottom of the middle length, which, when the ladder is in an upright position, shut or slide down upon the next rung to the upper one of the bottom length. When the middle joint is fully drawn out, it will move back and forth as on a hinge; when shut together, the two lengths are as stiff and strong as if each side of the ladder were a single piece.

"The upper joint is fastened to the middle joint in a precisely similar manner. The projection at A, fig. 1, should be 4 inches in length, so that the joints can only be folded in one direction. This will make the ladder safer to use;



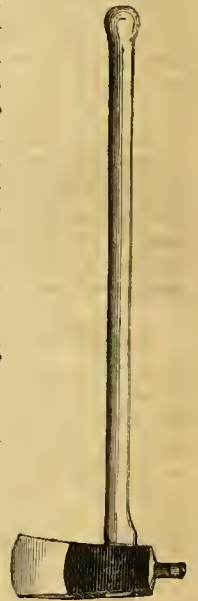
Fig. 2.

for, otherwise, should the joints be even drawn apart with a person on the ladder, it still remains stiff, unless it be turned over. The lower ends of the side pieces of the upper two joints should then be made as represented by the enlarged end on the left hand side of fig. 1. A good length for the bottom and middle joints is 8 feet each, of the upper 7 feet; this will give a

total length of about 18 feet, when shut together and used as shown in fig. 1. In case a ladder of 12 or 14 feet is wanted, and a greater length becomes inconvenient, draw out and let the upper length swing down; it is then out of your way. This is a very desirable feature for building and painting, also in stacking hay and grain out of doors, as is done in this section of country. When folded, as in fig. 2, it becomes a first-rate fruit ladder, allowing two persons at the same time to ascend on opposite sides. The upper length, having notches in the sides near the end, which shut over the lower rung of the bottom length, acts as a brace, making the fruit ladder firm and safe. The rungs are 1 foot apart."

Cattle Plagues.—Rinderpest. Texas Murrain, etc.

We have had little to say of late in regard to the direful malady which has visited the herds of the farmers of Great Britain during the past year, because it has been rapidly decreasing in activity, and distinguished veterinarians and others have been most studiously investigating its nature, causes, and treatment. An immense amount of matter has been printed upon the subject—nine-tenths, or more, of which has been the crudest speculation, and the most empirical "bosh." The whole country, so to speak, has run mad after one remedy or another; and the natural anxiety of cattle owners (who saw their herds or those of their neighbors, swept off by this mysterious contagion) to get something, or do something to stay the plague, was seized upon by unprincipled men to make money in one way or another. That kine pox was a cure was once the cry, and so cattle were vaccinated. Then some one said that small pox was a better protection, so the poor beasts were inoculated with small pox. Then it was claimed that cattle, inoculated with the rinderpest itself, would have it lightly and escape, and so there were plenty of people found to try this. There was scarcely any end to the medicines recommended as cures or as preventives. All the schools of medical practice, regular homeopathic, hydropathic, depletive, stimulating, etc., etc., all had their say and their followers; but all this



POLE AX.

was of no avail. Sensible people from the first followed the practice of the thorough veterinarians of the continent, and regarding the pole-ax as the efficient remedy, used it faithfully, and so great districts were saved. In an interesting review of this subject, which has lately appeared in the English papers, Prof. Simonds powerfully enforces this fact, viz.: in those districts, as for instance in Cheshire, where timid councils prevailed, and where cures were attempted, the most terrible devastation occurred and was perpetuated. In the above named county upwards of 72,000 cattle are reckoned among the victims of the disease, of which less than 8000 recovered, and a debt of \$1,500,000 is saddled upon the county. In other counties, where there was no temporizing, but every infected animal, sick or well, was killed and buried

at once, and the most stringent quarantine or isolation enforced, and all the movements of cattle by rail or on foot stopped, almost entire exemption has followed.—This disease may never reach America; but the lesson should be understood and heeded. There are other diseases not so bad, but perhaps bad enough to make it worth while to pursue the same remedy. One of these is the *Texas Murrain*, which has of late spread itself through parts of Missouri, Kansas, and we believe somewhat in Tennessee and Kentucky. The State Governments should act promptly, if the Legislatures are not in session, and by the most stringent measures put an end to a plague which may sweep off 30 to 50 per cent. of the herds of their respective States. The Missourians have, in many cases, very properly made laws for themselves and their own neighborhoods, and ordered back those herds, enforcing these orders with their rifles. So the cattle have gone round through Kansas or Kentucky. We get Texas cattle now and then in our Eastern markets. Who knows but we may get the murrain upon our farms, with the Western store cattle we buy for feeding? We commend the question seriously to all farmers.

To enforce our opinion of what is the only safe way of dealing with such diseases among cattle, we give a picture at the head of this article, of what is proved to be the *certain cure for the Rinderpest*, if dexterously applied—an implement which has become of historical interest from the role it has played in England the past year. If danger attends treatment—kill.

Portable Sheep Rack.

In our last volume, p. 369, (December), we gave a description of the sheep rack invented and used by Mr. N. B. Pearsall, of Otsego Co.,

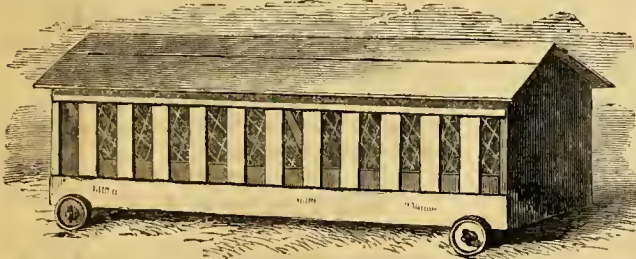


Fig. 1.—SHEEP RACK.

N. Y. Mr. P. made this *patent and free* to the public through the *American Agriculturist*, not in consideration of the exclusive right to make and use granted to him and his assigns for 17 years by the Government. The inventor suggested its use as a double rack, and on looking over the advertisements in some of our English exchanges, we find figured a rack set on low trucks, and roofed,

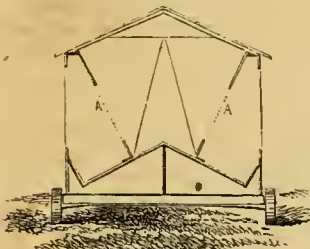


Fig. 2.—CROSS SECTION.

which for some purposes might be very convenient. From the same we take a hint in regard to wire hay racks. We therefore combine these with Mr. Pearsall's double rack, and trust the suggestions may prove of value to sheep raisers. The cuts make clear the construction. The outer racks have 6-inch spaces, and 6-inch pales. The troughs are for grain or roots, and will catch all the hay seed. The inner racks,

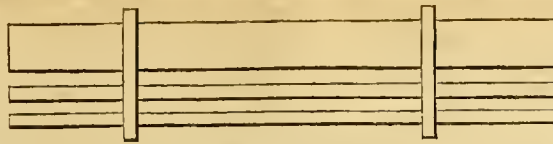


Fig. 3.—INNER RACK.

(made of wire or slats), keep the hay out of the troughs, and may be lifted out, or made to lean



Fig. 2.—WIRE RACK.

back out of the way if desired. The roof may be lifted off at any time by one man with ease.

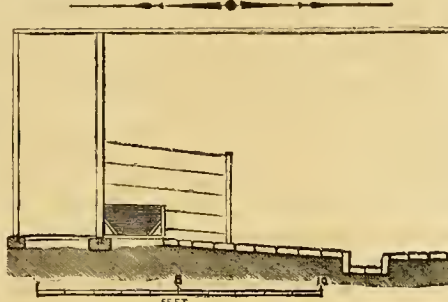


Fig. 1.
Cow Stables.

The well being of cows, and the ability to get the greatest amount of milk, depends in no small measure on the comfort of their quarters; but the comfort of the dam is vastly more important to ensure fine offspring. Some months since we took some measurements in the cow stables of a noted breeder of Shorthorns, and give the following outlines, figures 1 and 2, partly from memory. The cows stand in two rows facing the outside of the building. The entire floor is of brick in one stable (fig. 1), and of stone in the other (fig. 2), laid in cement upon the ground. The cows stand in double stalls, 8½ feet wide in fig. 1—6½ feet wide in fig. 2, each tied near the dividing

partitions. The feeding troughs are of the width of the stalls, 2 feet wide and 15 inches deep, made of 2-inch plank. In front of the stalls is a passage 3 feet wide for feeding, and at the rear a gutter laid in brick and cement, 14 inches wide in fig. 1, 12 inches wide in fig. 2. The floors of the stalls being made slightly slanting to the rear, to allow the liquids to flow off. The difference in the appearance of these stables is much greater than appears from the sections, the one represented in fig. 2 being

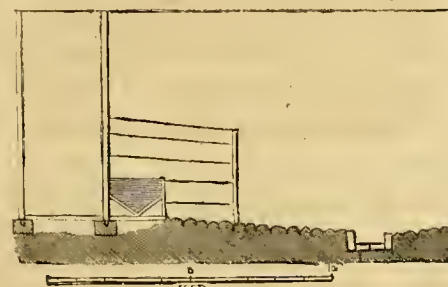


Fig. 2.

much more cheaply constructed throughout, and intended for milch cows. The feeding troughs

in this stable are not fixed in the position shown, but capable of being moved to the rear to accommodate the length of different cows, and should be so placed that the droppings will all fall into the gutter. In fig. 1 the troughs are stationary. The floor between the gutters in each stable is wide enough for a cart way, and ventilation is abundantly provided for. The floors are daily strewn with gypsum, the manure all being removed to a shed at a distance from the stables. Cows in such spacious quarters are vastly less liable to disease, their calves are healthy, and their milk is incomparably better

than that of those represented in fig. 3. This is a sketch of the cows in one of the best milk stables we know of near New York. The cows stand on the ground, are confined by stanchions, fed from half-barrel tubs, or have their hay or green fodder thrown to them on the floor. The space allowed each cow is about 3 feet. These stables are cleaned out daily, and the cows have an hour or two to run in a large yard. Nevertheless there is more or less of fever and disease prevalent, as indicated by the lack of sprightliness in their looks, here and there a gaunt animal with staring coat and hot breath, and the stump tails which several have. These are the two extremes of stable treatment. The best is

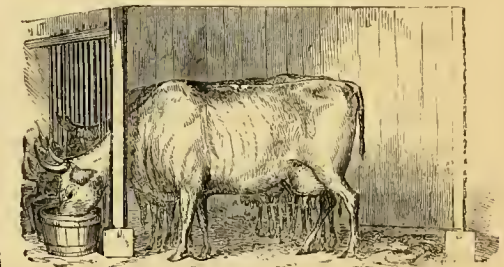


Fig. 3.

none too good for a choice herd; the second cheaper, and good enough for milch cows, for the milk consumer, and the profit of the owner.

A Great Invention in Bee-Culture.—How to Empty Combs.

The Bee papers of Europe and this country are filled with accounts of a discovery of a German Apiarian, of a method of emptying combs of honey without injuring them. The process is exceedingly simple and consists only in slicing off the caps of the cells, and then causing the combs to revolve on the periphery of a wheel or cylinder, which empties one side of honey—then the other side is turned and emptied. Liquids upon bodies which are whirled or revolved tend to fly off by what is called centrifugal force. In this case the revolution is so graduated that only the honey flies off, and dead bees, bee-bread, etc., remain behind, so that not only is the comb saved, but the honey is purer and better than that strained. The temperature requisite to success, is about 80° Fahrenheit, which is gained in a warm room, or on a summer day.

The value of this invention may be the better appreciated, when it is known that it requires the consumption by the bees, of 15 to 20 pounds of honey (estimates vary), to make 1 pound of wax, consequently, that the comb requires for its construction the use of just about as much honey as it will contain when filled. It may be found that in the economy of bee life, it is essential for the bees to make or excrete a certain amount of wax in order to remain in good

health—but this is hardly probable, for it has long been the practice of bee-keepers to save empty or partly filled combs with scrupulous care, and give them to the bees. And no bad results have ever been noticed.

Cotton Culture—Costs and Risks.

BY H. HINKLEY, M. D., EUTAW, GREENE CO., ALABAMA.

"Timothy Bunker, Esq.," (p. 316, Sept.) has gone into big figures in his estimate for a cotton place, and his figures may be considerably reduced. His estimate of yield takes for granted a crop is certain. But cotton is one of the most precarious crops grown, and has numerous enemies. A man in Sumter, ten miles from here, who planted 600 acres cotton, will make one bale to 50 acres; cause of failure, rust and worms. His loss will be over \$20,000. This is but one case in many this year. I planted 300 acres, expecting to make 100 bales cotton. Rain, rust, boll worm, and caterpillar, will cut the yield off so I shall be glad to get 20 bales. Others are better or worse, as the case may be. Tim Bunker puts down 60 hands for a 500 acre place. Forty hands are plenty, and 30 is all I want. I cultivate this year 300 acres corn, and 300 cotton, with 18 hands; will make 6 or 8 bushels corn, and had it not been for causes above mentioned, would have made 100 bales cotton. I have 16 mules, run eight double plows, part time, and part time six. I worked corn and cotton with Sulkey cultivators. Wages \$10 per month, and doctor's bills. Rations 3½ lbs. bacon and one peck meal per week. Three thousand bushels corn do the plantation one year. Mr. Bunker only enumerates wages for 10 months; it takes the whole 12 on a cotton place, and sometimes 13 could be used up. There is no rest or intermission in work for cotton.

Land is scarce that yields one bale to the acre; the majority of cotton land yields only half a bale—much land one bale to three acres; a bale is 500 lbs. Land can be rented at less than \$10 per acre—for all except the very best. Five hundred acres land worked in cotton, could be stocked and worked for \$15,000 per annum for first year, by any white man with brains, very easily, after first year; cost of stock and implements to be deducted, and seed also.—Half a bale to the acre would yield 250 bales of 500 lbs., at 30c. per lb., worth.....\$37,500.00 Deduct \$30 per bale for rope, bagging, hauling, wharfage, insurance, tax, commission, etc., etc.....\$7,500.00 Leaves.....\$30,000.00 Less expenses of plantation..... 15,000.00 Leaving a profit of \$15,000 for first year, provided nothing happened to injure the crop, etc. White men who improve their own land, work improved machinery, and work better than negroes, may do better even.

There is no need of rushing at the thing so largely. Why not be satisfied with one or two hundred acres? The cotton fever is likely to kill some, some never recover, and some are not injured by it. This year it will kill a good many. A New York General has thrown up a large plantation in disgust, and gone back to New York; others are weathering the storm.

The Slaughter of Animals for Food.

There are certain facts concerning the killing of the animals which form so large a portion of our food, that should be known by every meat buyer, if not meat eater, because they effect the condition of the meat, its healthfulness and keep-

ing qualities. Our own attention has been particularly directed to the subject by the opening of an immense slaughter-house near the City of New York, by capitalists and butchers of Chicago. The new *Abattoir* is in fact a regular Chicago slaughter-house for all kinds of animals, on a larger scale than anything existing there.

The old fashioned way of killing beeves, was to knock them in the head with a pole-ax, then cut their throats, and while bleeding commence skinning and slinging them up by the hind legs. Our butchers were slow to learn of the Jews, who practice throwing and slinging the animal and then cutting its throat, and in this way securing the most perfect possible bleeding, and following the Mosaic command, "the blood thereof, which is the life thereof, shalt thou not eat." Our butchers are now following a very similar practice, modifying it by hitting the beasts a merciful rap now and then on the head to destroy consciousness. In this way the beef bleeds better, as all the blood of the hind quarters at least tends to the throat.

There is a serious objection to knocking beeves in the head. The shock to the nervous system is such as to cause tremor and great rigidity in the muscles, although it is the part of humanity to put the poor beasts as soon as possible in a condition of unconsciousness. But this is a serious hinderance to free bleeding. European butchers have long practiced what is termed "pricking down," and this has also been to some extent done, or rather tried in this country. It consists in driving a narrow knife blade by an instantaneous motion in between the head and the first vertebra, piercing the spinal marrow. This destroys all sense, and paralyzes all the muscles of the body, leaving them soft and flexible. When an animal is in this condition, it must be slung up by the hind legs and bled at once, when the blood will flow quite as freely, as if the animal were conscious. This method therefore combines the excellence of the Hebrew way, and the humanity of the old knocking down process.

When an animal is killed during, or soon after a fright or great heat and exhaustion, it rarely bleeds well, but the meat is left bloody and feverish, it soon spoils, and is besides unhealthy. Whether the paroxysm of fear, which occurs when the animal is suddenly in full consciousness slung up by one or both hind legs, and which lasts until it dies, has any bad effect on the meat, physicians must determine. The superiority of the pricking down process is so evident, that we think it ought always to be followed.—It was not practised at the new *Abattoir*—though the killing there was done very expeditiously and the beef looked exceedingly well.

Horse-breaking and Horse-sense.

A horse's sense is good common sense. Many a man does not know half so much about some things as a horse, and there is a great difference in horses. The horse is not naturally suspicious, but he is timid when young. He learns very soon what his weapons are—teeth and heels—and in what his security lies—flight. His boldness and "the glory of his nostrils" come when "he rejoiceth in his strength." With his age comes the knowledge of his powers, and if he has never been mastered—never made to yield to any will but his own—if he is to be made useful, the struggle must come sooner or later, and man's-will or horse-will must triumph. We think it is best to begin quite young with colts to controll them. So advise to halter a colt

while it runs with the mare, and to do it after feeding it carrots and sugar, until it thinks it will get only caressing from mankind, and has no fear of any man. The colt submits easily, because it is the easiest and pleasantest thing he can do, provided he is not frightened, and would as lief be led as to run loose if the curtailment of his freedom is made up by sweets or carrots. The sense of smell in horses is very acute, and if they are suspicious of anything, they always approach it cautiously and smell of it. They should be indulged in this, and harness, saddle, etc., should all be investigated by the nose as well as by the eye, before a more intimate acquaintance is forced upon the horse. A horse-ring of 40 to 50 feet diameter is one of the greatest aids a horse trainer can have. In this a horse too restive and spirited to take a lesson may be tired out, so as to be very docile, and a tired horse is much more susceptible to both favors and instruction, than one full of *vim*, and fire and play. There are a few very simple common sense rules which, if followed, will commend themselves to the horse as well as to the trainer, viz.:

1st.—Always *feel* kindly toward a horse, no matter what he does to you, and consequently never show "temper." Remember the horse knows instinctively how you feel.

2d.—Never go near a horse if you are afraid of him, the horse will know it and take advantage of it, before you acknowledge it yourself.

3d.—Never undertake anything with a horse that you do not *know* you can carry out.

4th.—"Make haste *slowly*," teaching the animal what you want of him, as a child learns its A-B-C-s, one letter at a time, being sure that he knows each simple thing before you attempt to teach another; and repeat lessons often.

5th.—Reward each effort to do as you wish, whether he means it or does it accidentally.

6th.—Be sure that it is your will and not his that conquers every time.

Following these rules, you may make a horse do almost any thing, if he has not been spoiled before you get him.

Good Farming at the West.

[Another Western boy, of Lasalle Co., Ill., who selects the rather trite *nom de plume* of "Sucker," takes an evening in harvest time to tell the readers of the *Agriculturist* how a New England farmer has adhered to New England notions about manure, etc., and the success which has followed. There is no reason why Western farmers should not maintain the pristine excellence of their wonderfully fertile soil, and may even improve it for certain crops.—Eds.]

"My father is a native Yankee, but I suppose by this time considers himself a full-blooded "Sucker." But his having been in Illinois thirty-five years, can not get him out of the notion of good farming and high manuring.

"We consider that ordinary barnyard manure, without composting, or anything of the kind, will pay on an average one dollar per ton on the first crop, to say nothing of the benefit to crops afterwards. We have cultivated our farm for twenty-eight years, and it is as good as new land. While (whatever "Western Boys" may tell you) in this section, newly broken prairie always rents much better than old, and produces larger and earlier crops, except the old land has been manured.

"We expect to haul from 500 to 1000 loads of what our neighbors consider their valueless

manure upon our farm this fall and winter—one man and team hauling and spreading from six to eight tons per day. The best way we can seed to Timothy, is to sow on well plowed potato ground in the fall or early spring. The yield of hay is much larger than after any other crop we have yet tried. If the clover is allowed to stand more than three years, a good dressing of manure will greatly increase the crop. Before that time, however, manure will make the grass so heavy as to be apt to fall down before it is fully in blossom. To raise the best potatoes with the greatest yield, we first raise a crop of small grain on well manured land; after harvest, plow the ground shallow, but deep enough to turn under all the stubble; then plow very deep in the spring, and plant in rows two and a half feet apart each way. Corn will respond for manure applied to it in any shape. The farmers in this section used to rake and turn their corn stalks on the ground, where they intended to plant corn again, the corn being almost always husked in the field and the stalks left standing. But of late years they have been using rollers with knives, to cut the stalks in short pieces so that they can be plowed under, out of the way of their corn plows. They say they get a great deal better crops for it. Now, if this kind of manure pays, why not any other. In raising corn, we plow the well manured ground deep and plant as soon after as possible. Then, when the corn is nearly up, if the land is not too wet, we take a two-horse cultivator, (or one-horse plow), and set the shovels to throw the dirt up to the corn, and plow it out by the marks, covering the corn deeply. Then follow the plow, immediately with a good heavy roller, lengthwise of the ridges, rolling the ground down nearly flat again. The corn will be up in a day or two, and thus get two or three weeks start of the weeds. The corn is then large enough to run a cultivator crosswise of the ridges, close enough to the corn to cover up all the fine weeds in the hill. And this advantage, if well followed, obviates the necessity of hoeing. But if something of the kind is not done to give the corn a start of the weeds, hoeing is necessary. The same rule holds for potatoes, sorghum, etc."

A Hint on Improving an Old Place.

Once or twice a year we make a visit to a friend who came into possession of an old farm, and who has already made great progress in improving and beautifying it. Like many places of this kind, it was enclosed in a solid, but not very sightly stone wall. The matter of a boundary fence was considered by him in all points of view, and he finally fixed upon and carried out successfully the following: The old wall was allowed to remain, and close to it, upon the outside, a hedge of Norway spruce was planted. The trees, from a nursery close at hand, were set a year ago, in August. All weeds have been kept closely mowed, the grass has taken a foot-hold, and the result is, that from the roadway proper, there is a belt of grass to the hedge, and this has, although set in August, lost scarcely a tree, and has become so dense as to already nearly conceal the wall from view. The whole presents an aspect of finish and elegance, in marked contrast with the slovenly appearance of the opposite side of the road. The spruce hedge is protected from injury by cattle and other causes, by means of a few lengths of galvanized wire stretched to temporary posts. Another year will probably show the complete success of this treatment of a boundary wall.

Colored Foliage Plants Last Summer.

To meet the demand for plants with foliage other than green, some very fine things have been introduced, and among them, others more odd than elegant. The old annual, *Perilla Nankinensis*, is one of the best known of these. Its blackish purple foliage is not so common in our gardens as formerly, it having been superseded by others. The best of these plants with colored leaves, to our notion, is *Coleus Verschaffeltii*,—we wish it had a more comely name. When grown in the green-house, its leaves are green with purple markings, but when planted out with the sun fall upon it, they are all purple, and with a tinge of bronze. Nothing can be richer. *Coleus atropurpureus*, has a sprawling habit; leaves of a dark liver color, and not worth growing. There are some other varieties of *Coleus*, but none of them equal to the first named. A great deal was predicted of the *Iresine Herbstii* or *Achyranthes Verschaffeltii*, which we figured in February last. We hardly open an English horticultural journal but we find a discussion upon its merits. We consider it quite inferior to the *Coleus*, as its color is too dull for any brilliant effect.

Some of the *Amaranthus* are very fine. *Amaranthus melancholicus*, var. *ruber*, is a brilliant annual, but *A. paniculatus*, var. *sanguineus*, is much finer, and is one of the showiest of all the colored leaved plants, both these *Amaranthus* are annuals, as is the tri-colored variety of *A. melancholicus*, an old plant known as "Joseph's Coat," but very showy when well grown.

About Covering Things from Frost.

In some things it is well to recollect the old proverb, "Make haste slowly." Many persons, as soon as the first frosts have hinted that winter is coming, hasten to put everything into winter quarters. Apples are hurried into warm cellars, half hardy plants are shut up in close frames, or those that remain out of doors are smothered with a covering of straw or manure, and various other examples of "killing with kindness" are to be seen. Living plants, that are to be covered, need to be quite at rest, and they should first have all the cold they can bear without injury. Much of our covering is not so much to protect from cold as from the sudden changes of freezing and thawing, and such plants may be left until the ground is crusts. Cabbages, celery, and such things, need to have the covering put on gradually, and thus avoid heating. Indeed, some prefer to allow their cabbages to freeze first and then cover them with straw and earth to keep them frozen all winter. Winter fruit should never go into the cellar until there is danger of its freezing, and then the cellar should be kept open as long as the state of the weather will safely permit. Water often does more harm than frost, and all crops left in or on the ground, or stored in pits, should have provision for draining off the water. Where half hardy plants are put into pits or cellars, or cabbages, cauliflowers, etc., are wintered in cold frames, give air every mild day. The transition from the open air to confinement, should be gradual. In removing pot plants to the dwelling, this should be borne in mind; it will be found much better to place the plants in a room without a fire until really cold weather, than to remove them at once to a heated sitting room. When plants of any kind have been frozen, the thawing should be very gradual. A tolerably hardy plant will be injured if

brought into a warm room to thaw, while a tender one may often be saved if set in a dark cool place to thaw out gradually. When plants are put in a cold pit, green-house or cellar for winter protection merely, it is desirable to keep them perfectly dormant. Such plants should have no more water than is actually necessary to keep them from injury by drying. The functions of vegetation now go on very sluggishly, and but little water is needed. If the earth in the pots is nearly dry, it may be frozen through without much injury to the plants.

Holidays and Evergreens.

[SEE NEXT PAGE.]

Christmas without its evergreens, would lose half its holiday charms. The custom of decorating churches and private dwellings is a pleasant one, and, in cities at least, well nigh universal. Most children know, and those of us who are no longer children recollect, the pleasures of anticipation, as well as the realized enjoyment of which the Christmas tree is the center. We might say much of the genial influences of the Christmas tree—for no other tree bears fruit so fragrant with the best affections of our natures—but we set out to write upon its business aspects. Unsentimental as it may seem, all this holiday decoration results in putting money into some one's pocket. We never fail to make several visits to the markets in the week that precedes Christmas. The sight is one which would astonish a stranger. Not only do the woods and swamps of New Jersey repeat the wonder of "Burman's Wood" coming to "Dunsinaue," but our nurserymen send in their over-grown evergreen stock by the load, and turn all the streets near the markets into green avenues, where the city odors are for the time replaced by the balsamic scent of the fir and cedar. The traffic in these green commodities is very large, but so irregular and divided up that it is difficult to get any statistics. The articles bring good prices, for in holiday times the purse is as open as the heart, and the vendors know it, and profit by their knowledge. Our artist has given a sketch from the evergreen market, and surrounded it by leaves of some of the principal kinds used for decoration. Spruces and Firs, are always in demand for Christmas trees, and bring better prices than they would as living trees for planting. Holly, especially with berries, Laurel, Inkberry and Hemlock, are all sold in great quantities. The smaller evergreens are made up into wreaths or "roping," as the dealers call it, of various lengths; there are usually of one of two or three species of Club-moss and sell at about five cents a yard. Another class of decorations is made with a frame work of lath or twigs, and covered with some kind of green. These are formed into crosses, stars, and other devices. Some of the wreaths, etc., are prettily decorated with bright berries, while others, to meet a cruder taste, are made gaudy with flowers cut from brightly colored paper. The huge piles gathered around the markets are soon scattered; every express wagon takes a share, men and women ride in omnibuses and cars with their hands filled with them, and the poor woman who takes home her own market basket, bears a bit of holly or other green with it. These evergreens now cease to be articles of traffic, as soon as they are taken to the house of rich or poor they become consecrated by entering the sanctuary of home, and contribute to the enjoyment of that holiday that celebrates the announcement: "Peace on earth; good will toward man."



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EVERGREENS IN THE HOLIDAYS. — (See preceding page.)



DOUBLE GERANIUM.

Bedding Geraniums—A Double One.

The common name, Geranium, has become so well established in the popular mind, that were we to say *Pelargonium*—the proper botanical name—a large class of our readers would be at a loss to know what plant was intended. Pelargoniums differ from the true Geraniums in the structure of their flowers, and the two are separated by botanists—but for our purpose we will follow the majority and call them Geraniums. Not many years ago Geraniums were grown exclusively as pot plants. Now they are among the most valuable of our bedding plants, and each spring our propagating establishments turn them out by thousands. From the old Scarlet Geranium, with its plain green leaves, and the Horse-shoe Geranium with a dark semi-circular mark upon its foliage, we have a great variety of seedlings and sports. Some of these have the leaves green and white—others yellow and green, and then a series with the foliage striped with reddish brown, white, and yellow—as gay as a leaf need be. But alas! these beautiful sports, about which English cultivators write so enthusiastically, can not endure our hot suns, and we are obliged to give up the most of them for bedding uses. Some, however, do tolerably well, and perhaps the most satisfactory are: the Mountain of Snow, green and white, and Cloth of Gold, green and yellow. A circular or oval bed cut in a lawn, planted in the center with some of the free flowering scarlet varieties, and bordered with these variegated ones, makes a very brilliant show.

Altogether the finest scarlet Geranium we have ever seen is an American seedling, called General Grant; we believe it originated in Ohio.

The flower is of good size and color, the truss so enormous in size as to hide the foliage and make the bed one sheet of flowers. We saw a bed of this remarkable variety in the grounds of Ellwanger & Barry, and doubt if a finer thing in the way of geraniums was ever seen. Quite a novelty among geraniums was brought out this year by Mr. Henderson, in which the flowers are perfectly double. This is called by the rather absurd name of *ranunculiflora*. We say absurd, as we object to the use of Latinized names for florists' flowers. A double geranium is such a novelty that we have had an engraving made of it. When we saw the plants they were too small to judge how effective they would be in the mass. Certainly this will prove valuable to the bouquet makers, on account of its brilliancy of color and double character. Geraniums are favorite window plants, and when they have plenty of room and light, bloom freely. Generally we see them badly shaped and drawn up into long-legged, forlorn looking subjects. No plant is more tractable than the geranium, and by pinching and pruning it may be brought into any desired shape.

HALF HARDY PLANTS.—It is well known that certain plants will pass the winter safely, if they have only a slight protection; but most cultivators do not seem to be aware that this

protection is given as much against heat as it is against cold. Like the man who was reported as having died, not of his disease, but in getting well, many of our plants can stand freezing better than they can thawing, and if protection to so-called tender things is not given until mid-winter, it often answers perfectly. A barrel, put over a shrub, shields it from sudden changes. A good light and dry cellar is a great help, in absence of a green-house. Tender roses, Lantanas, Oleanders and many other things that are very useful, when put in a cellar and just kept from freezing, will "worry along" nicely and they will generally come out all right in spring.

The Diseases of Trees.

It is with not a little surprise that we look upon the number of letters inquiring about diseased trees, that have accumulated upon our hands. It is the opprobrium of scientific horticulture that so little has been done to investigate the subject of plant diseases. We have read about all that has been written on the subject, have talked with the most experienced pomologists East and West, and find that there is really little positive information extant. All admit the existence of certain maladies, and attempts have been made to enumerate them. A recent work on horticulture gives us Latin names for these tree troubles; though it may gratify the inquiring mind to know that freezing is *congelatio*, and that decay is *caries*—we are unable to see that it adds much to our knowledge. Among the causes assigned for the unhealthy condition of our trees, some are sensible and others absurd. It is a very common

thing for the would be scientific, to attribute phenomena they cannot explain to electricity—and this agent has been the refuge of several of those who have written upon the diseases of plants. We have one letter before us from a photographer—who, taking a photographic view of the subject, is quite sure that the pear blight is due to the effect of the sudden light of flashes of lightning in a dark night—though he fails to tell us why this affects one tree, and leaves another of the same variety, next to it, untouched. In discussing this subject, we must recollect that all fruit trees are, in a measure, unhealthy; that the larger or finer our apples and pears, the more they have departed from the natural condition. This being the case, we ought not to look for perfect health in every cultivated variety. As to our ability to cure diseased trees by any medication, we doubt if it will ever be attained. To many who write us with the view that we can prescribe something to cure their trees, we must confess our inability to do so. If good feeding will not help them, together with drainage, we fear that the case is hopeless. Want of vigor or health is often due to a lack of alkaline matter in the soil, and benefit is often experienced from a free use of lime or ashes—but this is fertilization and not medication. Some of the most serious troubles, such as bark bursting and cracking, are due to changes of temperature beyond our control. The selection of varieties that mature their wood early, and the use of low headed trees, rather than those with long and naked stems, are the best preventives against these troubles. As to the leaf blight, that as yet remains a mystery. Until its real nature is understood, we must act empirically, and cut severely whenever it appears, even if it takes the tree down to the ground. Our pomological societies have, as a general thing, given too much attention to the quality of fruit, to the neglect of the character of the tree. Of late years there has been an improvement in this respect. We have good fruits enough, now let us go in for healthy trees.

Grafting Nut-bearing Trees.

This subject seems to be one that is exciting considerable interest, and we have asked for the experience of cultivators without receiving any satisfactory replies. We find in a French journal an article by M. Peretti, who claims to have had satisfactory success with ordinary cleft and crown grafting. He prepares his trees beforehand by cutting them back so as to induce them to throw out numerous young shoots, and when these shoots are a year old, he saws them off about 18 inches from the trunk and inserts a cion in Spring in the usual way, by cleft or crown grafting.—We shall be very glad to hear of the success of this or any other method of grafting the walnut and chestnut, as there are many trees that produce fruit of so fine quality that it is desirable to propagate it.

Cut-leaved and other Odd Plants.

We are never satisfied with the ordinary way of things. If we have a new plant with a red flower, we are not content unless it "breaks" into all the shades that red flowers are capable of, and if it will only sport into stripes and blotches, our happiness, as far as this flower is concerned, is complete. Trees, in branching, have their limbs form some respectable angle with the trunk, but let one get an unnatural twist and it is forthwith propagated as a "Weeper,"

and our grounds are filled with miserable, distorted, unsightly abortions, called weeping va-

know how to grow decently, being catalogued as a weeping variety. Then we have plants with variegated foliage—sold often at enormous prices. Some of these with distinct and well defined markings, are well enough to make up a variety, but the most of them are poor, sickly things, that fortunately soon die out. Another class of variations from the usual condition is found in the cut-leaved plants. In these the blade of the leaf has its margins more or less deeply indented—sometimes quite down to the midrib. Now we do not object to the striving after novelties, for it is to this spirit, that satiated with its present achievements, strives to attain to something beyond, that we are indebted for our great progress in horticulture. But we do dislike the indiscriminate praise of a thing simply because it is new or odd. In matters of horticulture, taste should be considered, and if we are to have monsters, let them be lovely ones, and possess real beauty of color and form. There are many of these abnormal forms of vegetation that we

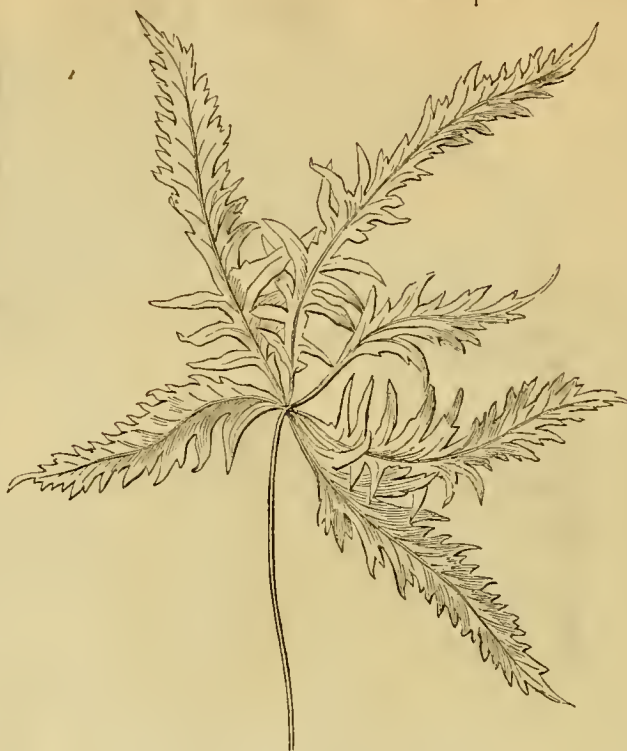


Fig. 1.—SKELETON-LEAVED HORSE-CHESTNUT.

rieties of trees, that in their normal state are beautiful. There are some graceful weeping va-

really like, and many others, that, like animal monsters, ought never to be propagated.

Some of the most pleasing of these freaks are found among the cut-leaved plants, in which we often get a remarkable effect from the finely divided condition of their foliage. Cut-leaved birches, beeches, maples, etc., are not rare, and are to be had at our principal nurseries. We have seen in the grounds of a friend a new thing in the way of cut-leaved trees—the "skeleton-leaved" Horse-chestnut. One would suppose that the leaf of the Horse-chestnut was cut up enough naturally; but in this the leaflets themselves are sub-divided, giving the leaf a most singular appearance, which we have represented in fig. 1. We recently saw in the grounds of Mr. D. D. Buchanan, of Elizabeth, N. J., a cut-leaved variety of the common Sumach. This was discovered many years ago in Westchester Co., Penn., and we first saw it in the grounds of our venerable friend—the late Doct. Darlington. Every one knows the common Sumach, *Rhus glabra*, so frequent in sterile soils. In this variety, the long pinnate leaves are sub-divided in such a way that the whole plant presents a delicate fern-like appearance. We have only room to illustrate a single leaf, and this does not convey an adequate idea of the beauty of the whole shrub. The green of the leaf is very dark, and the stem is of a rich purple color, that contrasts finely with that of the leaves. This variety in autumn takes on the same gorgeous scarlet and crimson colors as does the usual form, which is a plant that, by its intensity of color, adds much to the brilliancy of our autumn scenery.



Fig. 2.—CUT-LEAVED SUMACH.

rieties, however, that are really fine, "we only protest against every miserable thing that don't

THE SURPRISE APPLE.—This is an old variety, though one that is seldom seen. It has no great value as an eatable fruit, but is worth growing in large collections as a curiosity. It is a small, rather pretty apple, with a clean yellow skin, and when cut, the flesh is found to be red throughout. From the appearance of the exterior no one would expect to find it red within, and when cut it is truly a surprise.

Insects and Plant Fertilization.

SEVENTH ARTICLE.

One more arrangement for natural cross-fertilization remains, which we will notice very briefly. We take as an illustration the Plantain. The common Plantain of door-yards would probably be the best example, the flowers being less crowded than in the Ribwort Plantain (*Plantago lanceolata*), which we have actually adopted. All the blossoms are perfect and alike, and have four stamens with very slender filaments, and one pistil with a slender style, the upper part of which is hairy and acts as stigma. But when a spike of Plantain comes into flower—which it does from below upward—we may see, as in fig. 1, only the long stigmas



Fig. 1.—A spike of the Ribwort Plantain (*Plantago lanceolata*), just coming into blossom, the stigmas only protruding from the lower flowers. Fig. 2—Another spike, a little later; the stamens of the lower flowers now hung out.

protruding, as if it were a female plant only. Later, and after the stigma of these lowest flowers have begun to wither, the stamens will appear, the anthers hanging out on the long, delicate filaments. And so, as the flowering proceeds up the spike, day after day, the stigma will be protruded quite in advance of the stamens, the corolla just opening at the tip to let it pass through, while the anthers, as yet on short filaments, are snugly enconcealed within. After a day or two, the four-lobed mouth of the corolla

will open, the filaments will suddenly and greatly lengthen, and the anthers, which are now discharging

their pollen, will be hung out in the wind—for the Plantain-flowers produce no honey, and are neglected by insects. The accompanying figures exhibit the whole case: and the explanation, now that we understand it, is simple enough. We have already seen in dimorphous flowers, also hermaphrodite, the stamens and pistils reciprocally long in one flower and short in another, otherwise similar; so that the pollen is more or less prevented from reaching the stigma of the same flower (and sometimes even unable to act upon it if it did), but is in the way of being carried by insects to the stigma of the other sort, upon which it promptly takes effect. In Plantain the same end is reached by a different way. Close-fertilization is absolutely prevented by the stigma being thrust out of the still closed blossom, long before the anthers that surrounded it are able to shed a grain of pollen. But this same stigma is exposed to the pollen of other flowers, belonging either to a lower part of the same spike, or to some neighboring plant. By the time the stamens of any flower appear, the accompanying stigma will probably have been

acted on by other pollen, and will be too far gone and withering to take any of that same flower. So cross-fertilization is here made as sure as if the flowers were separated into male and female—and with great economy of material.

This arrangement in Plantain and some other flowers was pointed out by Sprengel, about half a century ago; and he gave it the name of *dichogamy*. He saw that it meant cross-fertilization. But as neither Sprengel or any one else

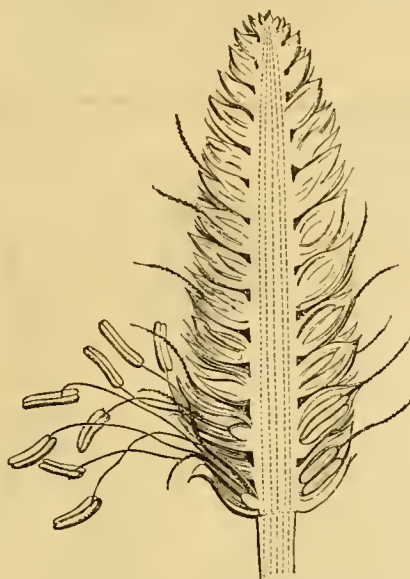


Fig. 3.—Section lengthwise of a spike of the same, enlarged; several of the flowers with the stigma projecting, but the anthers still enclosed; the two lower left-hand flowers with their stigmas withering, and their stamens hung out.

in those days discovered any particular advantage in this crossing, the subject attracted no attention, until the sense of it was recently brought out by Mr. Darwin.

Dichogamy occurs in many Grasses, which are also fertilized by the wind. But it is not rare in flowers which are visited by insects; where the arrangement is as effectual as dimorphism in securing crossing. It is very common in the Umbelliferous family; and is very neatly exhibited in *Amorpha* or *False Indigo*, a peculiar genus of the Leguminous family. Here the sin-



Fig. 4.—A piece of the same spike, more magnified, with one of the earlier and one of the later flowers remaining, the rest removed. The stigma of the lower flower, with the stamens out, is withering; that of the upper, with the anthers still enclosed, is ready to receive pollen.

gle petal is wrapped around both the stamens and the style of the opening flower; but the stigma projects a day or two before the anthers are disengaged; and a bee, passing as it does up the spike, carries off pollen from the lower and earlier flowers, deposits some of it upon the stigmas of higher flowers, and the remainder upon those of the next spike or plant visited.

With these illustrations, which may serve as

a guide, we commend the whole subject to the observation of the curious, confident that many interesting facts remain to reward careful observation, when the proper season returns. A. G.

Notes on Grapes and Grape Culture.

The notes prepared for last month were crowded out, and now a press of other matter compels us to be very brief.

Catawba.—Some specimens at Cleveland showed what this grand old variety can do where circumstances are all favorable. It succeeds perfectly in a few localities, and where it does, there is nothing better.

Iona.—We hope to have more full accounts of the behaviour of this, in widely separated localities, than have yet been supplied. We saw about 50 vines in the vineyard of Mr. Onderdonk, at Nyack, N.Y., which for health and fruitfulness were all that could be desired. In some places it has mildewed. It has been somewhat largely planted at Hammondsport, but the vines, though vigorous, are not yet old enough to fruit. We have no doubt that in Pleasant Valley the Iona will attain its highest development.

Lydia.—This is a very handsome white grape, good sized berries, the clusters are not large, though we only saw the first fruiting of a vine. Probably too late for general culture, as it seems to ripen about with the Catawba.

Mottled.—This is, we believe, a Kelly's Island seedling. A good sized berry, of a Catawba color, mottled with a lighter shade, which gives the fruit a not altogether healthy look. Judging from the first fruiting of young vines, this seems to be a promising variety, and will probably be valuable as a wine grape.

Walter.—A seedling by Ferris & Caywood, Poughkeepsie, N. Y., claimed to be a cross between the Delaware and Diana, a claim which the fruit seems to sustain. That this is a fruit of marked excellence is shown by the award of the first prize, "quality to rule," at the Cleveland exhibition. This award created some discussion, the committee being three for the Walter and two against. Mr. Mottier expressed his dissent from the award. This grape has a remarkably fine flavor, is very sweet, but is rather tougher than some others. It is claimed that the vine is perfectly hardy and a rampant grower. The leaf is certainly very robust. We shall know more about this variety another year. To save answering questions we may state that this variety is not yet in the market.

Rodgers' Hybrids.—Though these grapes have the endorsement of those whose opinion carries weight with it, we have nothing to modify in our notes given last year. We hope some good ones may be found among the many numbers, but we have yet to see one that is not too "foxy" for a table grape.

The meeting at Cleveland very properly passed a resolution requesting that the best of the varieties might be selected and named.

Norton's Virginia.—Something after the style of the Clinton, but with larger berry and bunch. The vine is difficult to propagate, and in Missouri it has not this year sustained its former reputation. The fruit is only fit for wine, the quality of which is alluded to in another article.

Ives' Seedling.—There is a history to this

grape for which we have not now space. It has been known for some twenty years as a healthy vine, a good grower, and an abundant bearer. Bunches somewhat after the style of the Isabella, but longer. Fruit very sweet and decidedly foxy. An indifferent table grape, but one that promises to become of the first importance to the wine grower. The vine propagates easily, and the young plants, of which we have seen some thousands, show a remarkable vigor.

Allen's Hybrid.—The reports of this grape the present year are generally favorable. One cultivator tells us that his returns received for those sent to market were sixty cents per lb. at wholesale.

Seedlings.—We hear but little of the new seedlings of the past two years. New "hybrids" and other seedlings that attracted some attention, do not seem to have fruited this year. Less than the usual number of "new grapes" have been sent us, and some that we have had, have been so poor that our advice has been, to root up the vine at once, and put something tolerable in its place. We have had to pay the express charges on several parcels of grapes that no one, with a civilized nose, could tolerate in the same room with him. If persons will send these wild foxy things, they should at least put them here without cost to us. Every now

and then a foreign grape turns up, the fruit of which, in a favorable spot, will mature. Mr. Geo. Van Nest, of Pluckamin, N. J., sent us a cluster of a grape of this kind, which was well ripened, and so like a Golden Chasselas, as not to be readily distinguished from it. Our friend "Horticola," of Hoboken, N. J., has raised a seedling from a Crimean grape, that in his grounds is remarkably healthy, and which bears most excellent fruit. We hope that it may do well elsewhere. It is not impossible that we may yet get a seedling of the European vine that shall be perfectly hardy in our climate. The so-called Allen's Hybrid is tolerably hardy—and this is by most good judges considered as purely a foreigner. We are as yet very skeptical on the subject of hybrids; *i. e.*, crosses between the European and any of our grapes. We know that crosses of varieties have been made, and while we do not by any means say that a hy-

brid is impossible, we can say that we have yet to see a grape that unmistakably gives evidences of being a hybrid.

The Mountain Ashes.

Among the ornamental trees useful for the brilliancy of their fruits in autumn, the different species and varieties of the Mountain Ash hold the first rank. Aside from their showy ripe fruit, the trees are pleasing in shape, have good

best authorities keep them as distinct species. The European Mountain Ash, (*Pyrus aucuparia*), has larger fruit than ours, and the divisions of its leaves are shorter, blunter, and of a paler color. We have in the Middle States a variety of the American tree as distinct from the usual form as that is from the European; it is known as the Small-fruited Mountain Ash; it forms a shrub not over 10 feet high, with fruit not larger than pepper-corns, and sometimes in cultivation.

In the city of Rochester we have noticed that

what is known as the Oak-leaved Mountain Ash, is a favorite ornamental tree. It has a very erect habit of growth, forms a compact head, has a robust and dark-green foliage, and produces an abundance of brilliant scarlet berries. We give an engraving showing the shape of the leaf, from specimens obtained at the nurseries of Frost & Co., Rochester. We judge that this is what has been called *Pyrus pinnatifida*, and is considered by some as a garden hybrid. Mr. Barry informed us that they imported it from Scotland, many years ago, under the name of *P. quercifolia*, but that now the name seems to be dropped from the foreign catalogues. Whatever may be its proper botanical relations, Oak-leaved Mountain Ash is a sufficiently distinctive name for one of the most beautiful of our ornamen-



OAK-LEAVED MOUNTAIN ASH.

tal trees, and a clean and healthy look. They are not in any way related to the Ash-tree, but probably obtained their popular name from some resemblance in foliage to the Ash. They belong to the genus *Pyrus*, which includes the apple and pear; and though their fruit is very small, borne in clusters, and the leaves are quite unlike those of the apple and pear, yet the botanical characters of the flowers and fruit agree so well, that botanists very properly put them all in the same genus.

The American Mountain Ash, (*Pyrus Americana*), is quite common in the mountainous districts at the North. It grows 15 or 20 feet high, and is much more robust in cultivation than in its wild state. Both this and the European Mountain Ash, or Rowan-tree, are common in cultivation, and the two are so much alike that some botanists have regarded the American as a mere variety of the European tree; but the

tal trees, and one that we hope to see more widely known and cultivated than it now is.

Mountain Ashes are raised from seed, and particular varieties are continued by grafting. The seeds remain in the ground over one year before they germinate, and it is necessary to keep them in a rotting heap for a year. The berries are mixed with light soil and spread in a layer, 10 or 12 inches in thickness; this is covered with some 3 inches of sand, and allowed to remain until the next spring, when they are sown in beds. The plants appear the following spring.

The Greeley Grape Prize.

In the autumn of 1864, the Hon. Horace Greeley offered a prize of \$100 for the variety of grape best suited to general culture, the award to be made by a committee of the American Institute. At the fruit exhibition of the Institute

that autumn, the prize was awarded to Doct. C. W. Grant, for the Iona. As but few kinds were offered in competition, on account of the short notice, Doct. Grant relinquished his claim to the prize and the matter was again thrown open. A new committee was appointed, which met in the fall of 1865, but adjourned for a year without making any award. In September last, another exhibition was held, at which there was another competition for the prize, and on October 27th, we find in an obscure corner of the Tribune an announcement of the award. The committee, after stating the grounds of their determination, give the prize to the Concord. Let us hope that we have seen the last attempt at selecting one variety, of any kind of fruit, as the best for everybody, everywhere. It was *well intended*, but has produced more dissatisfaction than can be offset by any good that will result.

THE HOUSEHOLD.

For other Household Items, see "Basket" pages.)

TO HOUSEKEEPERS.—The high appreciation of this department of the paper, expressed by so many of our fair readers, leads us to lay out plans for increasing its value materially during the course of the next volume. The \$100 prize offered last month (p. 390), and other expenditures, the procuring of additional editorial aid in this department, and the devotion of more time to it, are among our plans for the future. We solicit abundant communications, and any number of questions about practical topics. We desire something beyond mere recipes, though, when good, a limited number of these are valuable. There are a multitude of interesting topics—those which occupy so much of the housekeeper's thoughts, and are the source of so many anxieties—that may be appropriately talked over in these columns, such as clothing, furniture, variety of food, care and health of children, etiquette, arrangement of the table, economical variety of food, etc., etc. If every housekeeper who, in visiting, or in her own experience, gets a new idea about the best mode of doing this or that, would note it down in simple plain words and send it to us, the probability is that the idea would be new and valuable to ten thousand others.—We are apt to think that what we now know well, is understood by everybody else. But multitudes of others are now just where we all were in knowledge only a few years ago.

Home-Binding of Papers, Pamphlets, etc.

In response to an inquiry in June, we have numerous plans for home-binding of copies and volumes of the *Agriculturist*, from which we select the following—applicable to all kinds of smaller papers, pamphlets, etc.:

(A)—By N. H. Coleman, Lamotte, Iowa: *First*.—Open two consecutive numbers, as January and February, in the middle, and place them back to



Fig. 1.

back, that is, outside against outside (fig. 1). Run a needle with a strong thread in at *a*, up on the other side to *b*, bring it through to you, put in again at *a*, bring it through at *c*, and up to *a*, and tie the two ends in a fast knot. Close the papers, and bring them round to their proper position, one upon the other. They may then be cut and read as desired.—*Second*.—When the numbers of a volume are all thus stitched in pairs, lay them together in order (as in fig. 2), and with a straight awl punch

holes as near the edge as you can and be sure to catch inside the running thread previously sewed in. Put the needle in at the upper *a*, bringing it back at *b*, in at *a*, back at *c*, and tie at *a*, as above. Repeat the same at the lower three letters. This is all quickly done, and will leave the whole a strong book, with a back entirely elastic. The thread first sewed into the pairs will be caught by the through threads, and hold the whole firmly. Let the thread be strong and doubled.



Fig. 2.

—It is better still, to put strips of paste-board along the edges and sew through them in the final binding. Or full sized paste-board covers may be fastened on in the same way. A leather back may be added, and colored or fancy paper be pasted upon the paste-board, and over its edges. [Single numbers may be sewed as described for two, though this leaves the thread exposed at the backs. We print this year's index and title page separately, so that they can be readily placed in front of the volume in binding.—Ed.]

(B)—By Mrs. C. H. M. Newell, Wilbraham, Mass.: Cut two pieces of stiff card or box-board, a little larger than the paper to be bound. Cover the edges and the outside with any fancy colored paper; make four holes about $\frac{1}{2}$ inch from one edge of each, and fasten into each hole firmly a common eyelet. Take four short pieces of red tape, tie a knot in the end of each, and put the other ends through the front cover. As each new paper comes to hand, makes holes in it, then take off the back cover, put the paper in and the strings through, and tie them in two pairs. The knots will hold the other ends. This method has served my purpose very well. [By having the horizontal threads described in A, the papers can be punched much nearer the backs so that they will open more freely, and the whole will be stronger. Then, this cover, B, will be neat and convenient for adding successive numbers.—Ed.]

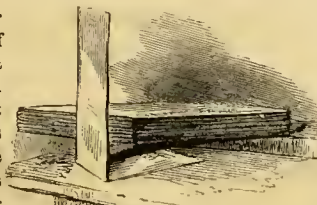


Fig. 3.

(C)—By J. Fleming, Craigleth, C. W.: Provide two pieces of strong tape, $\frac{1}{2}$ to $\frac{3}{4}$ inch wide and about $3\frac{1}{2}$ inches long; draw it through paste, stripping the surface clean, and dry in the form of fig. 3. Place the papers evenly together, press them well awhile, and then place them on the tapes as in fig. 4. Mark down each side of the tapes as a guide; then sew the papers upon the tapes, letting the strong sewing thread pass along on the *inside* of each paper and over the *outside* of the tape just as books are sewn on to cords, which may easily be seen by dampening and taking apart an old book. Round the back a little, and coat with thick glue. For covers, cut two pieces of stout paste or card-board, $\frac{1}{8}$ inch larger on all sides than the trimmed papers. Glue the projecting tapes to the inside of the covers in book form, and glue over each tape end a bit of canvass to hold it firmly to the cover. Glue a piece of coarse canvass over the back of the book. When all is dry, the whole may be covered with paper, cloth, or leather, according to fancy.



Fig. 4.

(D)—By E. H., Geneva, Ohio: I cut two pieces of paste-board large enough to cover the paper, and

pass twine through them thus (fig. 5), leaving ample space between for a volume. The numbers as received are stitched in in book-binder's style. [The thread is run along the inside of each paper, but put through the back and around each cross string at the back, as above described. Ed.] —At the end of the year the ends of the cord are drawn down and tied firmly, making a strong volume. This is not very elegant, but it is substantial and cheap, [and is far better than to have the numbers scattered around in loose leaves.—Ed.]

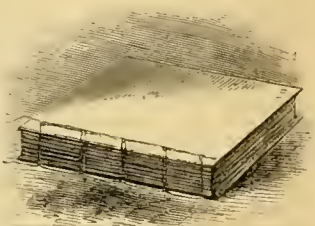


Fig. 5.

(E)—By Amos L. Griffith, Jasper, Tenn.: Make a cover of two pieces of paste-board or bonnet board, and a piece of calf or sheep skin long enough and wide enough to cover the back and lap about $\frac{1}{4}$ inch upon each side cover. Stitch it on firmly, as in fig. 6, using strong, well waxed thread. If desired, hide the stitches by pasting on a piece of cloth or paper [which may extend over the whole cover.—Ed.] Put in the papers, and run a strong waxed twine or shoemaker's "wax-end" through the whole, four times.



Fig. 6.

I have used this method on books and papers for 15 or 20 years, and the first one made, though in constant use, is as good as new. The binding did not cost ten cents. [In all these methods, the papers should first be sewn with a strong thread running along the inside, and through and through the back. The cross threads through the back will come inside of this to hold the papers fast.—Ed.]

(F)—We keep on hand at the office regular *Agriculturist* covers for binding, or "jackets," as the book-binders call them, which have gilt backs and are all ready for any book-binder to insert the volumes, at a cost of 25 to 50 cents. These can be used during the year as portfolios to hold the papers, and then be bound up at the end of the year. We have them for 1866 and 1867, and for each of the past nine years. They are furnished for any year desired at 50 cents each, (60 cents if sent by mail.)

Don't Buy the Bitters.

Before us is a Religious Journal having a "Bitters" advertised flamingly in a whole column, and the editor endorses and commends it, because the manufacturer asserts that it contains no alcohol. Yet, from a bottle of that same "Bitters" bought of one of its agents, we readily extracted 14 per cent. of pure alcohol, without a close analysis. Common whiskey, by a similar incomplete analysis, yielded only 29 per cent. of pure alcohol. A bottle of material sold under the name of "Temperance Bitters," yielded 11 per cent. of alcohol, by the same treatment. A few years ago we gathered bottles of every kind of bitters we could find advertised and sold, and they every one yielded alcohol, the lowest 9 per cent., and the highest 24½ per cent. The truth is, all these various "Bitters" so extensively advertised (to the amount of more than a million dollars a year!) are cheap whiskey or gin, diluted with water and adulterated with a little bitter extract, some of them having a small quantity of Rhubarb and other drugs added. The bitter principle extracted from Gentian root, Peruvian bark, etc., is sometimes useful in cases of weak digestion, or a debilitated state of the system, if properly taken under medical advice, and only used temporarily. But the general use of these adver-

tised bitters is doing an immense, an incalculable injury, not only by being wroogly taken and begetting a necessity for regular stimulants, but they are creating and extending an appetite for other alcoholic liquors, which promises to make us a nation of drunkards. A person buys a bottle, takes a little, is stimulated by the alcohol and what of bitters they contain, and temporarily "feels better." He continues the use, increases the dose when the reaction occurs, and usually falls into drinking habits.

A gentleman recently informed us that he counted 127 bottles in his attic which had been emptied of one kind of bitters by his now invalid wife, and other members of the family, during four years past. For awhile they seemed to help her, but latterly she had experienced unpleasant effects from the large doses required to keep her up, and she was now depending upon Bourbon Whiskey.—The stimulating effect of the alcoholic bitters when first used, led her to dismiss her physician. She is now looking forward to the grave near at hand; her physician, called back too late, gives no hope of life. "Do," said our friend, "Do expose these worse than humbug bitters. My children, accustomed to the daily use of some of 'mother's bitters', are now always sick, if not given some frequent stimulants." That friend is a wealthy merchant of this city, and the bitters were first introduced into his household by a glaring advertisement in his favorite religious journal.

We assert positively that all the "Bitters" advertised contain a considerable percentage of alcohol; they would not "keep" without it. Their constant use is always detrimental and dangerous; their use at all is of doubtful utility; they are cheaply made and sold at an enormous profit; and no one should countenance their sale, or assist their manufacturers in humbugging the ignorant, by ever purchasing a single bottle. If a temporary tonic is needed, and it should only be temporary, get a reliable physician to prescribe it, and the extent of its use. His bill, and that of the druggist, will be far cheaper and more effective, and infinitely safer than the trial of anything of secret composition, put up in bottles, and sold by specious advertisements.

Selecting Wall Paper and Carpets.

The Hall is generally a mere passage-way to something better beyond, and therefore it should not be so embellished as to attract special notice. Paper with figures of light pillars or pilasters, looks well, as does that which is marked off in courses representing marble or stone, or grained to represent oak or other woods.—The Parlor is for a different purpose, and should receive a different treatment. It is the flower of the house, the place for superior dress, courtly manners, the expression of the finer sentiments, and its adornments should be delicate and ethereal. The covering of the walls should not be obtrusive and glaring in color and forms. An over-dressed wall looks as unseemly as an over-dressed man or woman. A parlor wall should be a pleasant surface and background for objects, and not be a conspicuous object in itself. It should seem airy and light, shutting us in loosely, giving a sense of freedom and breathing space. Moreover, this wall is designed partly for the support of paintings and engravings, and these appear to much disadvantage on a surface broken up by scrolls and bosses, and huge bouquets.—The Living-Room should have a cheerful toned paper, less delicate than the parlor, but by no means gaudy and glaring. The Dining-Room should be plain, but rich. The Bed-Rooms, of course, must be neat and simple, the prevailing colors by no means dark. The Library should be of some sober, neutral tint, yet warm and cheery.

The Carpeting of these several rooms should correspond in style to the papering. A few years ago, the designers of carpet figures ran mad with huge designs, and glaring, ill-assorted colors. In crossing a floor, one had to tramp over scrolls, cornucopias, and bouquets, several feet long. But latterly, a change has come for the better. Even now, there are vivid colors and monstrous figures

enough, but we advise our friends to pass these by, and leave them to the upholsterers when hired to embellish flash hotel parlors, and steamboat saloons. Our homes must be embellished with something more subdued and chaste, and therefore more permanently pleasing.

Original Contributions to the American Agriculturist.

Hints on Housework, Cooking, etc.

Information Wanted.—Our Household Drawer contains numerous queries, which will be answered as we find room, and time for investigation, but hints from our readers on any of these topics will always be in order, and thankfully received. Housekeepers can greatly aid each other by talking together through these columns—asking questions, and giving answers. Fancy and other Soaps are much inquired about, that is, how to make them. We have more notes to add to the long article on Soaps, on page 403, November No., waiting room.—Boot and Shoe blackings, can some one give us condensed notes all about these, the kinds, the good, and the bad, with the best mode of detecting the injurious articles sold? If no one does this better, we will try it soon.—One asks how to remove from cloth, stains made by "Davis' Pain Killer." Easily answered if some one will tell us what it is made of. We use no secret or patent medicines.

"Cheap Farmers' Pudding."—In a 2 quart pudding dish or tin basin, put 3 pints of sour apples sliced: cut 3 or 4 ounces of fat salt pork very thin and fry well, and pour the whole over the apples; salt a little, pepper and spice to the taste; mix a batter with sour milk and a little cream, thickened with flour, pour it over the apples and steam an hour; to be eaten with sugar or sauce.—*"A Farmer's Wife."*

Tapioca Pudding.—3 tablespoonfuls of tapioca soaked over night, 1 quart of milk, the yolks of 3 eggs; boil all together in a farina kettle, or in a tin pail set into a kettle of cold water and boiled; add sugar to your taste. When thoroughly cooked, take the whites of the 3 eggs and beat to a stiff froth, and pour over the whole while hot.—*Mrs. L. P. C., New Haven, Mo.*

Cracker Mince Pie.—For three pies, take 3 crackers rolled very fine, $\frac{1}{2}$ cup of vinegar, 1 cup of sugar, 1 cup of molasses [or an equivalent of sugar]; sprinkle in all kinds of spice desired; bake in crust the same as an apple pie.—*Mrs. L. P. C.*

Steamed Apple Pudding.—Make a dough as for biscuit, of 1 pint flour, 1 teaspoonful cream of tartar, $\frac{1}{2}$ teaspoonful saleratus; mix with milk if convenient, or if with water, add a little shortening. Divide into three portions. Then take a pint of apples quartered, and put a layer at the bottom of a pudding boiler, cover them with crust, and put a layer of apples and crust alternately, taking care to have the crust on the top. Steam two hours.—It is very good.—*Mrs. L. L. Decker, Manchester, Mass.*

Puff Pudding.—3 eggs well beaten, 9 tablespoonfuls of flour, 1 pint of sweet milk; bake in cups in a quick oven; serve with sauce.—*Mrs. L. P. C.*

Cottage Pudding.—Take 1 quart flour, 2 cups sugar, 6 tablespoonfuls melted butter, 2 cups sweet milk, 2 beaten eggs, 2 teaspoonfuls cream tartar, $\frac{1}{2}$ teaspoonfuls soda. Mix well and bake or steam in a mold or large tin basin, [which should be only part full, as it rises up nearly double.—Ed.] Serve with beaten butter and sugar, or wine sauce. What is left from dinner is good for tea cake.—*Mrs. H. W. G., Oregon, Illinois.*

Wine Sauce.—Stir to a cream, $\frac{1}{2}$ teacupful each of butter and sugar, with the white of an egg. Add $\frac{1}{2}$ cup water, with a very little flour, and boil all together with a cup of wine, or less, according to its kind and strength.—*Mrs. H. W. G., Oregon, Illinois.*

Bread without Yeast.—(Of Wheat or Rye flour.) 1 quart sour milk, 2 tablespoonfuls lard, 1 teaspoonful each of cream of tartar and soda sifted and well worked into the dry flour. Also use flour enough to mold up well. Let it rise 1 hour in pans in a warm place, and bake in a quick oven.—*H. D., Fairhaven, Conn.*.... [As the lightness is produced by the soda with the combined acid of the cream of tartar and sour milk, which act quickly, we should say the bread would be lighter to bake as soon as mixed; if left awhile, some of the freed gas would escape.—Ed.]

Feather Cake.—(Simple and good): 1 cup white sugar, 1 teaspoonful of butter, 1 egg, 2 even cups sifted flour, $\frac{1}{2}$ cup of milk, 1 teaspoonful cream of tartar, and $\frac{1}{2}$ teaspoon saleratus or soda. Flavor with essence of lemon.—*Mrs. B. V. Foster, South Danvers, Mass.*

Pilaff.—This is the great dish of the Orientals, and is so truly delicious and so cheaply and easily made, that it is a wonder it has not become, ere this, a common dish in other countries. It is prepared in the following manner: Boil sufficient rice (according to the number of mouths to feed) in a large quantity of water. It should be put in cold water with a little salt, and not stirred while cooking. When thoroughly done, strain off the water through a colander or sieve, and each kernel will be separate and solid. Then season with salt, pepper, butter, and a little tomato sauce; cut up (not very fine) roasted or boiled mutton, or veal, and mix with the rice in proportion of about $\frac{2}{3}$ to $\frac{1}{3}$ meat. Let them simmer together a few minutes, and serve hot with the meat gravy. The water that the rice has been boiled in makes the very best starch for fine work. P.

Another Oriental Dish.—The Vegetable Marrow, or any other summer Squash cooked in the following manner, is very delicious, and will make a dish for an epicure. Split the squash lengthwise and remove the seeds. Then stuff with finely minced roast veal, or mutton, and tie together firmly. Boil until the squash is nearly done, then take out of the pot, and opening it, put in a piece of butter and whatever seasoning you may prefer, and closing it up again, place it in the oven for a few minutes, until it finishes cooking. When entirely done, serve it up, and you will be satisfied with your effort. The smaller kinds of squash are the best. P.

To Fry Fish.—The ordinary manner of frying fish in a shallow pan with only a small quantity of grease, may be much improved upon by imitating the Greeks, from whom we may also learn many other useful lessons in the culinary art. Take a large quantity of lard in a deep kettle, and let it boil as for frying doughnuts. While boiling, drop in the fish, having previously rolled them in flour or meal. In a few minutes they will be of a rich, uniform brown, when they may be taken out and served while hot. They will be found infinitely more delicate in flavor, as well as more inviting in appearance than when cooked in the old way. This is recommended by the long experience of the writer, and it will be endorsed by all who try it. P.

[The philosophy of frying is well illustrated by the Greek process detailed by our traveled correspondent. We may add that success in frying always depends primarily on having plenty of hot fat. If there is but little fat, the article cools it down to that degree that is readily absorbed by the food. This fact, that cool grease is absorbed before it has time to cook the article fried, while plenty of very hot grease cooks it quickly, and is not absorbed at all, should be impressed upon all cooks.—Ed.]

Sour Curd Cheese or "Smeerkase"—**Cements, Paints, etc.**—After milk curdles naturally, it is skimmed of its cream, the pan set over hot water on the stove and left until it is scalded but not boiled, which would spoil it. As soon as the curd separates freely when stirred, strain it through a cloth laid on a perforated vessel, or basket. When it ceases to drip, it is ready for use. This is "Smeerkase," to be salted and eaten in any way preferred.... Smeerkase when mashed with a spoon, thinned with sweet cream, salted, spiced with kummel (caraway), then spread upon steaming hot "Irish cups," or other equally good potatoes, boiled with the skin on, forms my favorite dish for supper, and is good enough for a king.—[The curd of cheese which is the caseine, is a nutritious food, similar to lean meat in its muscle-strengthening effects.—Ed.]... **LIME AND CURD CEMENT.**—Air-slaked lime in fine powder, thoroughly mixed with smeerkase without water, forms a strong cement or putty, for broken crockery, etc. Lime enough is added to thicken it to a proper consistence. Lime with white of eggs also makes a strong cement, but dries too soon for convenient use.... **LIME AND CURD PAINT.**—Quick lime slaked in water to a milky condition and poured into a hole in the ground, soon thickens. This, as wanted, is mixed with an equal amount of Smeerkase and used for paint, and for water-proof glue. A very good way to preserve lime for use in small quantities as needed, is to run it into the ground as above, and cover it with sand or anything else that will keep out frost.—*H. Goepfer, Warren Co., Ohio.*

Men's Shirts.—*Mrs. B. V. F., of South Danvers, Mass.,* writes, that 8 years ago her husband obtained a good fitting shirt, and she ripped it enough to cut an exact linen pattern. This pattern has been always used since, and with complete success, even to the making of flannel under shirts, which fit better than any that are usually sold. "The pattern is a yoke with a point down between the shoulder blades, the back being sloped back so as to meet, and gathered slightly. This leaves it smooth on the neck and shoulders, and loose where the movement of the arms would be affected by any tightness."—[As hinted in October, the main trouble lies in not cutting out these garments with sufficient accuracy.]

BOYS & GIRLS' COLUMNS.

The Boys and Girls are Getting Many Premiums this Year.

During September, October, and November, we have received a great many more premium clubs than in any former year, and the young people are sharing in them. These are very acceptable, for aside from their pecuniary value to us, we like to see these business habits cultivated by the young. For many years to come our boys, and girls too, will be writing with the excellent gold Pens they are now receiving from our Office as premiums. Some will be constantly gathering information from their Cyclopedias and Great Dictionaries obtained in the same way. Others will always be "up to time," because they carry our premium Watches. Others will be busy making something new and useful with their chests of Tools. Many gardens will be planted next spring with our premium vegetable and flower seeds. Quite a number of aged people will be happy over the presents received from our premium list through the exertion of one or more of the little folks. A good deal has already been done in this way, mainly in getting new subscribers. The work can now begin in earnest, as there are more than a hundred thousand subscriptions to be renewed, which, with the multitude of new subscribers that can be found, will afford a large field for getting up premium lists of subscribers. Let every boy and girl go to work and try it this year. Some may get only two or three subscribers, perhaps, yet that will give them experience, and next year they will be much more successful. But let every one go to work determined to succeed this year. You have all the month of December, and if needed January and February too, to make up a premium club. Look over the list on another page.

A Boy Cuts a Cord of Wood.

"That's not much, I've cut dozens of cords," responds one of our fifteen-year old lads. But "H.," of Riply County, Ind., who was an officer in the war we believe, informs us that his boy of only eleven years old wanted to earn the *Agriculturist* himself last year, and he volunteered to cut a cord of wood to get it, and he did it! (Give us his name Maj. H., and give him a shake of our hand by proxy.) We like the spirit manifested. Boys who like to do something useful for themselves and others are the ones who will succeed when they are men. All such incidents are to us pleasant episodes, bright spots, in the laborious routine of our business life.

How Rain Falls.

Where does the rain come from? You answer, "From the clouds." But where do the clouds come from? You may think the wind blows them over you. But if it blows clouds over you from somewhere else, it also blows them from over you to other places. The fact is, the water of the clouds is just as much over you on a clear day as on a cloudy or rainy day. On a fair day when no clouds are seen, the water is divided up into such small particles, that it does not obstruct the sun's light, and so you see no clouds or water. A change of temperature in the atmosphere, as when a warmer and colder current of air meet, causes the small particles of water to unite in pairs, and the pairs unite, and these quadruple drops unite, and so on until hundreds or thousands of the small invisible particles unite in one, and even then that one may be many hundred times smaller than a pin's head. A mass of these combined drops which are still small enough to float in the air, reflects, refracts, or bends out of their course so many of the sun's rays that they stop and often darken its light. It is thus that clouds gather in a clear sky. When enough drops unite to make one too heavy to float in the air, it begins to fall. It meets and unites with many others in falling, and often so many unite that great rain drops are formed by the time they get to the ground. Each large drop is made up of thousands, perhaps millions of the small drops that float in the unseen air in a clear sky.

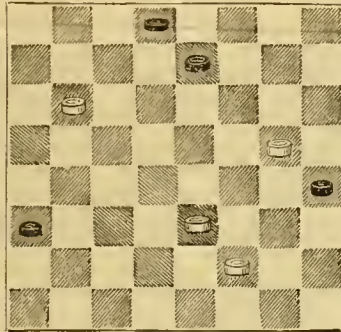
Great Amount of Rain.—Problems.

Did you ever think how much water there is in the air, floating unseen? It always amounts to nearly 3 gallons above each foot of the earth's surface, and often much more. As new vapor is always rising, the amount of rain that falls during a year is very large. At one place as many as 300 inches deep falls in 12 months—or enough if it all fell at once to cover the land with water 25 feet deep. In this latitude 35 to 45 inches deep fall annually. If this fell altogether, it would cover the earth deep enough to drown all the little boys and girls under 12 years old. If we covered our garden or fields with empty barrels, they would all be more than filled with falling rain in less than a year.... A pint of water weighs just a pound. A gallon contains 231 cubic or solid inches.

es. A barrel holds $3\frac{1}{2}$ gallons. If we call the annual fall of rain 40 inches, (1) How many barrels of water falls on a house, 25 by 40 feet?—(2) How many pounds of water fall on it?—(3) How many barrels of water falls on your roof?—(4) How many pounds falls on your roof?—(5) How many barrels, and how many pounds of water falls on a garden 25 by 100 feet?—(6) How many barrels, and how many pounds fall on a ten-acre lot. (There are 43,560 square feet in an acre.)—(7) How many tons of water fall upon the surface of the earth in a year, if the average depth that falls be 40 inches?

The Game of Checkers or Draughts.

POSITION NO. 10.—Black to play and win.
Black.



White.

GAME NO. 10.—FIVE OPENING. (*)

Black.	White	Black.	White.
1—11 to 15	23 to 19	17—18 to 23(i)	26 to 19
2—9 " 14	22 " 17	18—15 " 24	17 " 14
3—5 " 9	(a) 17 " 13	19—10 " 17	21 " 14
4—14 " 18	(b) 21 " 17	20—24 " 23(j)	31 " 26
5—8 " 11	25 " 21	21—28 " 32	25 " 21
6—9 " 14(c)	(d) 29 " 25	22—22 " 27	26 " 22
7—3 " 8(e)	(f) 26 " 23	23—6 " 9	14 " 5
8—11 " 16	30 " 26	24—27 " 19	22 " 17
9—7 " 11	24 " 20	25—23 " 13	17 " 14
10—15 " 24	28 " 19	26—19 " 15	11 " 7
11—11 " 15	20 " 11	27—2 " 11	13 " 9
12—15 " 24	27 " 23	28—15 " 18	21 " 17
13—18 " 27	32 " 29	29—18 " 22	17 " 13
14—8 " 15	20 " 16	30—22 " 18	14 " 10
15—12 " 19	23 " 16	31—15 " 14	10 " 7
16—14 " 18(g)	(h) 16 " 11	32—11 " 16.	—Black wins.

(*) It has been so named since Mr. James Wylie, the present Champion of Great Britain, played it against Mr. Andrew Anderson, at their great match for the championship in Edinburgh, Feb., 1817. (a) 26 to 23, draws. (b) 19 to 16, draws. (c) 18 to 23, draws. (d) 26 to 23, draws. (e) 11 to 16, draws. (f) 24 to 20, Black wins. (g) 15 to 19, draws. (h) 31 to 27, Black wins. (i) 18 to 22, draws. (j) Position No. 9. (November *Agriculturist*, page 405.)

Something About Meteors.

Almost any clear night those who watch may see what are called "shooting stars" darting across the sky. Sometimes these are very large; occasionally they explode with a loud report, and in some instances leave long trains of light behind them. Many of our young readers may have seen the remarkable meteor which was observed by the writer on the night of July 20th, 1860, and which was witnessed by thousands of persons throughout New York, and the Eastern States. It appeared first in the form of a large ball of fire, of a bluish color, like the ball from a Roman candle, but soon separated into two large and several smaller ones, accompanied by a brilliant path of light. One was seen in England in 1818, at 2 o'clock P. M., which shone as brightly as the sun, and descended vertically. Another passed over England in 1719, which eclipsed the light of the moon and stars, and burst with a tremendous report. Others of various magnitudes are recorded as having been seen in various parts of the world. Probably the most brilliant display ever known, was that of the night of November 12th, 1833, which was visible all over the United States, Mexico, and the West Indies. The heavens appeared filled with showers of stars, many of the first magnitude, darting along with almost inconceivable speed, and seriously alarming thousands, who thought that the Day of Judgment had surely come. As noticed in the *Agriculturist* last month, some astronomers are confidently expecting a similar phenomenon this year, as it is said to occur once in about thirty three years. At the date of this writing (Nov. 3rd), of course we can not know whether it will take place, but we shall be on the lookout for it. No man can tell with certainty what is the nature of these fiery visitors. It seems quite certain that they are composed of solid matter in a state of combustion, as many unconsumed fragments have fallen to the earth and been picked up, some of them very large, weighing many tons, others no larger than a bullet. The most probable theory respecting them is that a zone or belt of dark bodies of matter is revolving about the sun, and that its path is occasionally crossed by the Earth

in its revolution; that they are moving with such immense velocity as to take fire by friction, when they come in contact with our atmosphere, and that the attraction of the Earth causes them to leave their own orbits, and fall upon our planet, if they be not consumed before reaching it. One philosopher suggests that similar bodies swarm throughout the celestial spaces; that myriads of them are attracted by the sun, and that the force expended by them in their fall upon that body causes the heat which is developed from it.

Answers to Problems and Puzzles.

The following are answers to the Puzzles, etc., in the November number, page 405. No. 233.—*Illustrated Word*.—Ability....No. 234. 220,015.27 inches of wire....No. 235. *Mathematical Problem*.—5.85+feet....No. 236. *Illustrated Word*.—Eoundate....No. 237. *Grammatical Puzzle*.—The first him stands for bishop; his stands for patron; he stands for bishop; the last him stands for clerk....No. 238. *Illustrated Rebus*.—Line upon line, precept upon precept, benign injunctions, striking example and wise advice, are not infrequently overlooked; but experience enforces a lesson on all.

The following have sent correct answers to problems, up to Nov. 1st: Etoma Waterman, R. W. Fair, R. Ellis, Henry J. Meixell, Warren J. Buckalew.

New Puzzles to be Answered.

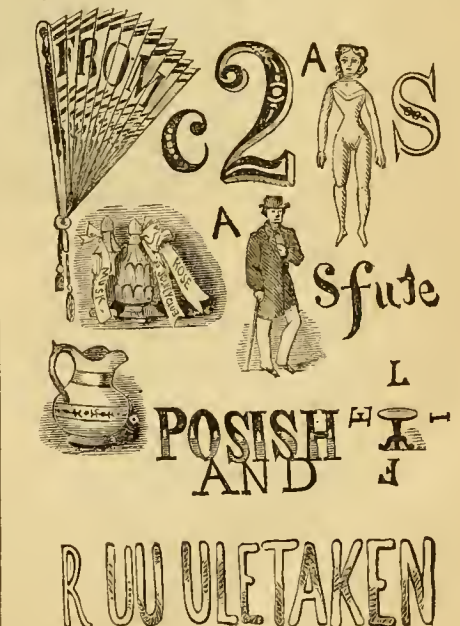
No. 239. *Mathematical Problem*, to be solved arithmetically. The crew of a ship consisted of Sailors and Soldiers. There were 22 sailors to every 3 guns and 10 over. The whole number of men was 5 times the number of sailors and guns together. After an engagement in which one-fifth were slain, there lacked 5 to be 13 men to every 2 guns. How many guns, sailors and soldiers at first?

No. 240. *Illustrated Rebus*.—Worth cultivating.

No. 241. *Mathematical Problem*.—A man has a triangular piece of ground whose sides measure respectively, 500, 300, and 200 feet each. How can he divide it equally among his four sons, giving each a plot of the same form?

No. 242. *Geographical Problem*.—Suppose a person to start from New York on Monday noon, and travel westward at the same rate the earth revolves eastward, thus passing around the globe in 24 hours. It would of course be noon the whole length of his journey; at what point in his journey would he find the inhabitants calling it Tuesday noon, supposing the whole of his route to be inhabited?

No. 243. *Conundrum*, from the "London Fun." Why is opium like a truthful father?



No. 244. *Illustrated Rebus*.—Worth remembering.

Our Young Soldiers.

When the late strife first commenced in this country, most of our soldiers were yet to be trained. They were working upon their farms, and in shops and stores. At the call of their country they took the field, and soon as fine an army as ever appeared, was ready to defend the right. Should another war break out during the lifetime of the present generation, there will be thousands ready trained in the manual of the soldier. The veterans who have returned to their homes, have kindled the martial spirit among youth, and as in the picture here given, even young children are taught to "shoulder arms," and play soldier. Boys so trained will scarcely grow up cowards. The memory of what their fathers did will ever inspire them, and we may feel sure that they will suffer no disgrace to befall American arms, if the times should demand their use. To engage in a fight for the love of strife, for the mere sake of fighting, is brutal, but to be ready to stand up for the right, on the battlefield if necessary is manly. We would have every American youth inspired by the true soldier's spirit, determined neither to do wrong, nor to suffer wrong to be done to our country. Besides this manly spirit which we expect to see developed by our recent history, the boys may receive great benefit by the physical training necessary to make a good soldier. Heads up, shoulders thrown back, form erect, step firm and elastic; these are indispensable to the good soldier, and valuable for every man. With a nation of boys with bodies and minds such as soldiers should have, there will be little danger of war; the nation will be far too strong to be attacked by any foe.

Grudging Forgiveness.

It is related that two men, former friends, became angry, and for a long time would not speak to each other. Finally one of them attended a Camp Meeting and professed conversion. One day not long after, he met his former enemy, and at once a severe struggle took place in his mind. He felt it his duty to speak to his enemy, and to be reconciled to him; but still the old grudge rankled. At last he determined to make an effort towards duty; he advanced, and, extending his hand, exclaimed, "How d'ye do Kemp? I am humble enough to shake hands with a dog." It was not surprising that the man so addressed should turn on his heel saying, "I'm not dog enough to shake hands with you!" In this case was well shown the fallacy of the expression often heard, "I can forgive, but I can't forget!"—which really means "I want the credit of having forgiven, and the privilege of still indulging ill-feeling."

The Gypsies.

Within a few years past this singular people have appeared in considerable numbers in different parts of the United States. They have been well known all over Europe for hundreds of years. They are called Zingari in Italy, Gitanos in Spain, Zigeuner (wandering rogues), in Germany. The Gypsies, wherever found, are much alike. In features they resemble some of the Asiatic races, having very dark skins, sharp black eyes, black hair, high cheek bones, the lower jaw slightly projecting, narrow mouth, and fine white teeth. They call

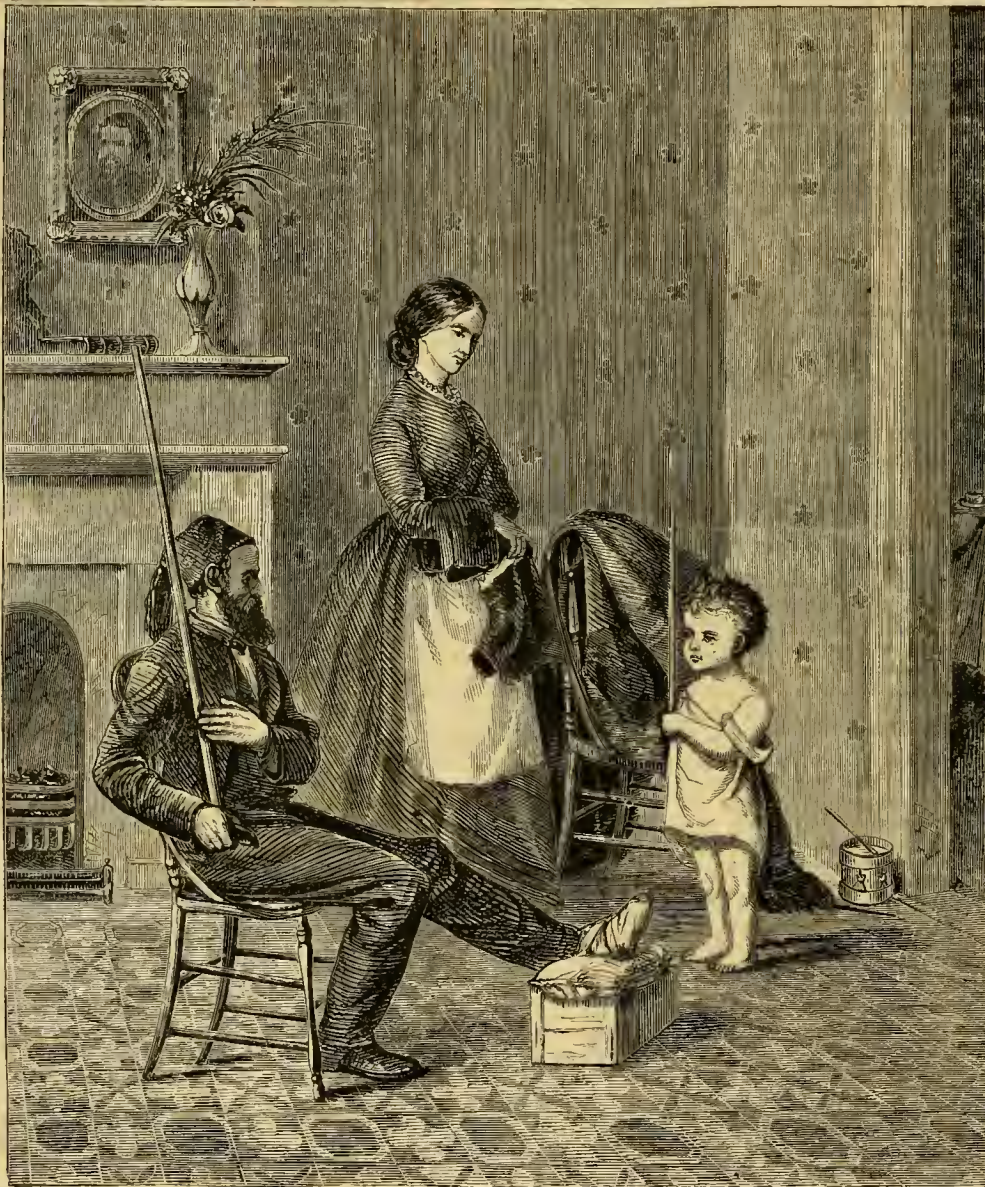
themselves Roma, also Sinte, and Pharaons; some of them believe their ancestors came from Egypt; others think the country near the river Indus was their ancient home; the latter idea is the more probable. The Gypsies, wherever found, have much the same manner of life. They have no fixed homes, but wander about from place to place, encamping where night overtakes them, usually carrying tents, or in some cases making for themselves temporary huts from branches of trees, and collecting leaves for their beds. They profess to make a living by mending tin ware, umbrellas, and other small articles, and by fortune telling. This latter occupation has given them great profit in ignorant communities. By keeping their sharp eyes and ears open, they usually manage to make themselves acquainted with the history of the persons in their neighborhood, and by making shrewd use of this knowledge, they are sometimes able

from time to time enacted against them in Europe, yet in spite of these it is said they number nearly a million souls there. As many parts of this country, especially the thinly settled localities offer many attractions to the Gypsies, we may expect to see their number increasing here; but increasing intelligence among the people will ultimately drive them to honest ways of living.

A Comical Misapprehension.

The following amusing incident is condensed from a long account of it given in a Southern paper: A countryman who was very deaf, driving a pair of mules before a wagon, was met by a negro with an ax on his shoulder, who asked him for some tobacco, which was promptly given. The negro thanked the donor, and looking steadily at him, repeated several times, "thank you,

thank you." The white man, not understanding him, thought he was asking for money, and became very much frightened, and declared he had no money. The negro perceiving he was deaf, now shouted, "I didn't ax you for money;" but the man in his fright only heard the word "money." The shouting started the mules, who turned to the opposite side of the road, and the negro, fearing they would overturn the wagon, seized the lines to bring them back. The white man now felt sure that robbery was intended, leaped from his wagon, and started at full speed for the woods, with the negro following him and shouting to him to stop. Finding he was being overtaken, the white man suddenly stopped, and as the negro approached, sprang upon him and endeavored to take his ax. This alarmed the negro, who feared he might be killed, and a desperate struggle ensued. Finally the ax was thrown far away, and each combatant springing to his feet started and ran from the other. The white man soon gained a neighboring house where he told a fearful story of the attack made upon him, and not long after the negro made his appearance and related his version of the story. It was finally decided that he should be kept in custody, and the whole matter referred to the Freedman's Bureau the following day. Accordingly the negro was confined, and the white man stood guard over him. The next morning the sentinel was found lying fast asleep by the



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to tell many things surprising to those who consult them. We need not assure our young readers, that their pretended revelations of the future are only random guesses, and their fortune telling an imposition upon the credulity of those who seek their aid. But a larger part of their income is derived by petty thieving, robbing hen-roosts, clothes-lines, and taking many small articles which in country places are often left exposed. They are greatly attached to their way of living and to their kindred. Instances are recorded of persons marrying some of the beautiful girls that occasionally have appeared among them; but the habits of a wandering life proved too strong, and after a few years of unhappiness in civilized life, they have returned to their outcast kindred. A few of these people are found in settled occupations. Occasionally one is seen in New York as a street dealer in crockery, tin ware, etc., and others are said to have become farmers; but these are rare exceptions, and are despised by their vagrant kindred. Severe laws have been

door of the room where the prisoner had been placed, and the negro was not found at all, having apparently concluded it best to take his chances without a trial.

The Motions of a Watch.

A gentleman has made a calculation of the revolutions which the wheels in an American watch make in a day and a year. The result is interesting. For example: the main wheel makes 4 revolutions in 24 hours, or 1,440 in a year; the second, or centre wheel, 24 revolutions in 24 hours, or 8,760 in a year; the third wheel, 192 in 24 hours, or 59,080 in a year; the fourth wheel, (which carries the second hand) 1,440 in 24 hours, or 525,600 in a year; the fifth (or scape-wheel), 12,960 in 24 hours, or 4,728,400 revolutions in a year; while the beats or vibrations made in 24 hours are 368,800, or 141,512,000 in a year. Have you read the fable of the clock pendulum, that, frightened by the work of a year, forgot its present duty?

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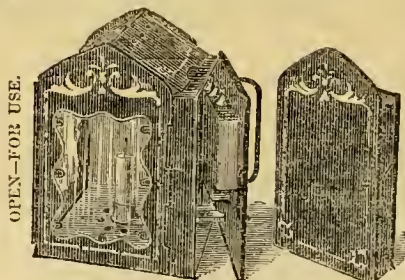
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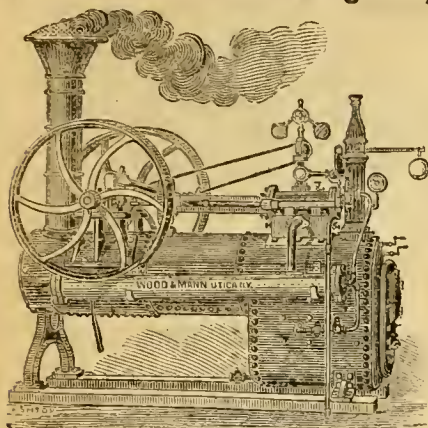
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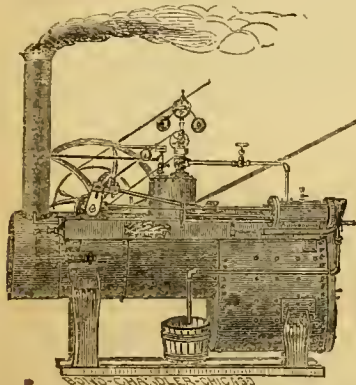
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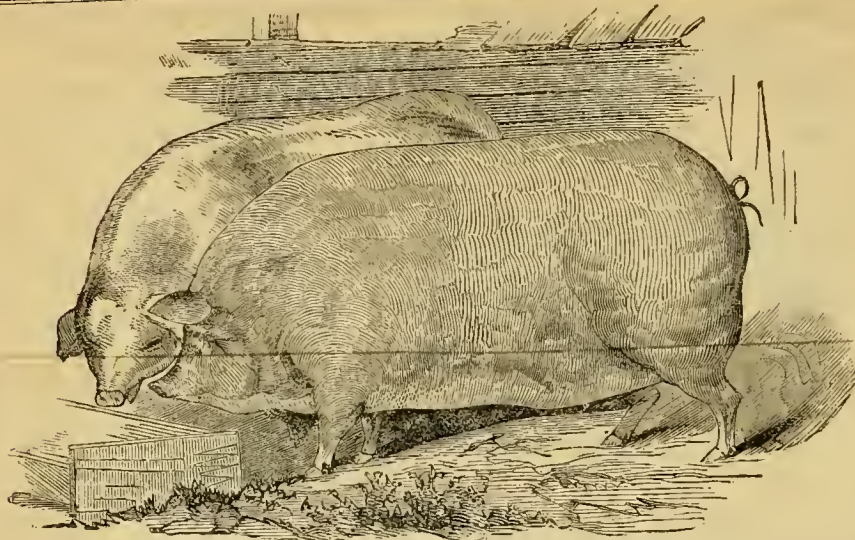
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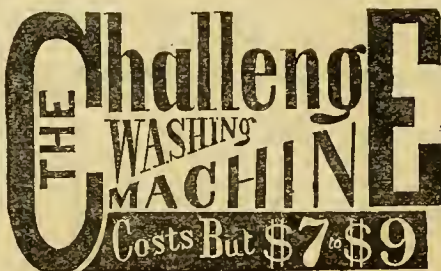
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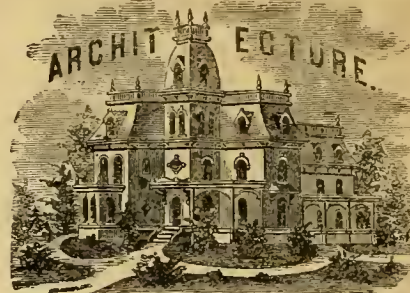
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Commercial Matters—Market Prices.

The following condensed, comprehensive tables, carefully prepared specially for the *American Agriculturist*, show at a glance the transactions for a month, ending Nov. 15, 1866, and the exports of Breadstuffs from this port this far, since January 1:

1. TRANSACTIONS AT THE NEW-YORK MARKETS.

RECEIPTS. Flour, Wheat, Corn, Rye, Barley, Oats.
27 days this month, 321,000 1,213,000 1,196,000 167,000 2,181,000 849,000
20 days last month, 329,000 1,244,000 1,161,000 172,000 2,135,000 838,000

SALES. Flour, Wheat, Corn, Rye, Barley.
27 days this month, 323,000 1,215,000 1,196,000 176,000 2,135,000
20 days last month, 329,000 1,244,000 1,161,000 172,000 2,135,000

2. Comparison with same period in our own year.

RECEIPTS. Flour, Wheat, Corn, Rye, Barley, Oats.
27 days 1865, 321,000 1,213,000 1,196,000 167,000 2,181,000 849,000
27 days 1866, 321,000 1,213,000 1,196,000 167,000 2,181,000 849,000

SALES. Flour, Wheat, Corn, Rye, Barley, Oats.
27 days 1865, 323,000 1,215,000 1,196,000 176,000 2,135,000
27 days 1866, 323,000 1,215,000 1,196,000 176,000 2,135,000

3. Exports from New-York, January 1 to Nov. 15:

Flour, Wheat, Corn, Rye, Oats.
1866, \$11,066 310,735 10,656,000 192,189 1,067,567
1865, 1,214,373 1,947,421 3,276,163 170,094 69,831
1864, 1,761,212 11,982,576 814,608 453 39,613
1863, 2,278,535 11,993,328 7,486,835 415,249 123,696
1862, 2,683,086 23,216,817 10,542,556 1,888,700 141,165

4. Receipts of Breadstuffs at the head of tide water at Albany, from the commencement of Navigation to Nov. 7.

Flour, Wheat, Corn, Rye, Barley, Oats.
1866, 261,400 4,378,800 29,346,000 910,400 4,059,400 8,330,500
1865, 701,300 7,378,200 15,142,600 782,100 3,198,300 8,620,800
1864, 970,100 13,415,600 9,035,500 535,500 2,678,700 9,440,000

CURRENT WHOLESALE PRICES.

	Oct. 15.	Nov. 15.
PRICE OF GOLD	153 1/2	143 1/2
FLOUR—Super to Extra State	\$7 75 @ 11 75	\$8 75 @ 12 40
Super to Extra Southern	11 80 @ 16 50	12 25 @ 17 50
Extra Western	8 50 @ 16 50	9 50 @ 18 00
Extra Genesee	11 80 @ 14 25	12 50 @ 14 00
Superfine Western	7 80 @ 10 10	8 75 @ 10 50
RYE FLOUR	6 50 @ 7 60	6 75 @ 8 25
CORN MEAL	4 75 @ 5 25	6 00 @ 6 25
WHEAT—All kinds of White	2 85 @ 3 30	3 00 @ 3 45
All kinds of Red and Amber	1 70 @ 3 00	2 05 @ 3 20
Corn—Yellow	96 @ 96	1 30 @ —
Mixed	91 @ 96	1 30 @ —
OATS—Western	54 @ 61	67 @ 70
State	62 @ —	71 @ 73
RYE	1 05 @ 1 28	1 30 @ 1 50
BARLEY	1 15 @ 1 82	1 10 @ 1 31
HAY—Bale 100 lb.	95 @ 1 45	1 00 @ 1 45
Loose	1 00 @ 1 50	1 10 @ 1 55
STRAW, 2 100 lb.	43 @ 1 00	70 @ 1 00
COTTON—Middle, 50 lb.	41 @ 41	34 @ 37
HOPS—Crop of 1866, 50 lb.	55 @ 60	50 @ 65
FEATHERS—Live Geese, 50 lb.	25 @ 82 1/2	35 @ 95
SEED—Clover, 50 lb.	13 @ 14	13 @ 17
Timothy, 50 bushel	3 50 @ 3 75	3 25 @ 3 75
Flax, 50 bushel	3 20 @ 3 45	Nominal
SUGAR—Brown, 50 lb.	43 @ 13 1/2	42 @ 13 1/2
MOLASSES, Cuba, 50 gal.	42 @ 54 1/2	50 @ 65
COFFEE—Rio, (Gold price), 50 lb.	17 @ 20	17 @ 19 1/2
TOBACCO, Kentucky, 50 lb.	5 1/2 @ 30	4 1/2 @ 30
Seed Leaf, 50 lb.	5 @ 43	5 @ 43
Wool—Domestic, 50 lb.	35 @ 77	25 @ 70
Domestic, pulled, 50 lb.	27 @ 60	27 @ 60
California, unwashed, 50 lb.	20 @ 40	20 @ 40
TALLOW, 50 lb.	12 1/2 @ 13 1/2	12 @ 12 1/2
OIL CAKE—50 ton	58 00 @ 60 00	53 00 @ 57 00
PORK—Mess, 50 barrel	31 00 @ 33 15	25 00 @ —
Prime, 50 barrel	29 50 @ —	21 00 @ 23 50
BEEF—Plain mess, 50 barrel	12 00 @ 18 50	13 50 @ 18 50
LARD, in barrels, 50 lb.	18 1/2 @ 18 1/2	17 @ 14 1/2
BUTTER—Western, 50 lb.	18 @ 35	17 @ 35
State, 50 lb.	36 @ 55	33 @ 55
CHEESE	6 @ 14	7 @ 14 1/2
BEANS—50 bushel	1 90 @ 3 00	1 90 @ 3 00
PEAS—Canada, 50 bushel	Nominal	Nominal
Legs—Fresh, 50 lb.	30 @ 31	32 @ 36
POULTRY—Fowls, 50 lb.	19 @ 23	16 @ 19
Turkeys, 50 lb.	18 @ 23	18 @ 22
POTATOES—Mercers, 50 bbl.	2 50 @ 2 75	2 25 @ 2 50
Peach Blows, 50 barrel	2 25 @ 2 50	2 25 @ 2 50
POTATOES—Buckeye, 50 bbl.	1 50 @ 1 75	1 50 @ 2 00
APPLES—50 barrel	3 00 @ 5 40	3 25 @ 4 50
PEARS, 50 barrel	4 00 @ 30 00	4 00 @ 20 00

Gold has declined materially since our last, more or less adversely influencing all commercial values. But the abundance of money, available to speculative operators on easy terms, has tended to foster a speculative inquiry for most kinds of produce, especially for Breadstuffs, which have been in unusually active request, partly for home use and export, but chiefly for investment, at much higher but irregular prices. Within a week or so, the demand has been less urgent, and as some holders have been eager to realize on their supplies, there has been less buoyancy in the market. As we write, the disposition to buy freely is reviving again, encouraged by the favorable foreign advices, particularly for Corn, and the tendency of prices of Flour, Wheat, and Corn is once more upward. There has been an unusually good export inquiry for Barley, chiefly the Canada, which has arrived in liberal quantities. Oats have been less actively dealt in by shippers. We enter on the winter months with a comparatively moderate stock of grain in store here, including, of Wheat, 703,855 bushels; Corn, 2,812,909 bushels; Rye, 271,727 bushels; Barley, 1,078,675 bushels; Oats, 1,597,245 bushels, and Mall, 57,404 bushels. The principal holders are firm in their views, anticipating a further rise in prices....There has been a very extensive business transacted in Provisions, chiefly in Mess Pork, on speculative account, opening at rapidly advancing

prices, but suddenly breaking down about the beginning of November, and since fluctuating widely. Toward the close the demand was becoming brisk again, and prices were quoted steadier. Mess Pork sold as high as \$36 a barrel on the 31st of October, having been engineered up to that figure by a clique of speculators; it sold as low as \$24.25 a barrel on Monday, Nov. 12th, under a pressure to realize. The collapse in the speculative movement led to the failure of one large house, and several small concerns, whose means were wiped out by the reaction....Cotton has been more freely offered, and has been in less request, closing decidedly lower....Hay, Seeds, and Tobacco, have been less sought after at irregular prices....Hops have been in good demand at buoyant rates....Wool has been in very slack request, especially for manufacturing purposes, and as stocks have been steadily increasing, prices have favored buyers decidedly, the market closing very heavily.

New York Live Stock Markets.

The supply during the past four weeks has been very large for the season, as is shown in the following table:

WEEK ENDING.	Beefers.	Cows.	Cattle.	Sheep.	Swine.
Nov. 13	7,137	76	1,036	27,120	17,771
Nov. 6	6,659	100	1,136	22,686	23,246
Oct. 30	6,789	133	1,321	29,796	22,487
Oct. 23	6,524	98	1,416	27,751	20,503
Total in four weeks	27,080	407	4,882	117,626	84,000
Average per Week	6,770	102	1,220	29,106	21,000
do. do. last Month	6,793	103	1,587	25,514	11,826
do. do. previous Month	6,221	92	1,309	25,790	11,606
do. do. 1865	5,525	118	1,500	16,091	11,023
do. do. 1864	5,401	115	1,511	15,815	12,616
do. do. 1863	5,150	139	691	9,911	21,610
Total Animals for Slaughter in past 5 Weeks	286,000				

The weekly receipts of beef cattle and cows have been nearly the same as the previous month; veal calves 367 per week less; sheep nearly 4,000 per week more; live hogs nearly 7,000 per week more. It will be seen that, as compared with the weekly average for all of last year, the weekly excess the past month has been 1,515 beef cattle, 13,315 sheep, and very nearly 10,000 hogs. This enormous weekly increase, which has continued now for above three months, readily explains the material decline in prices....**Beef Cattle**, under the continuous heavy receipts noted above, have gone downward in price, until to-day (Nov. 13.) "the bottom has dropped out," as the dealers say. The present rates are no more than 13c. @14c. per lb., estimated dressed weight, for the most of fair cattle; 14 1/2c. @15 1/2c. for superior quality 16c. @16 1/2c. for an occasional extra; 13c. @12c. for common thinish steers, oxen, and dry cows; 11 1/2c. @10 1/2c. for poor; and even 9c., or less, for some of the worst. Dealers who bought a few weeks ago are losing large sums....**Milk Cows** have recently been in better demand for families. The advance of milk to 12c. per quart, retail, makes it profitable for families to keep their own cows where they have barn or yard room. Really good cows go at \$50 @ \$100, young calf included; extras \$100 to \$110; an occasional fancy \$10 to \$20 higher; fair \$65 to \$75; poor \$60 to \$50....**Veal Calves** are always in demand to keep up on the hotel and restaurant bills of fare the "veal cutlets," and so with diminished supplies the best, prime, large fat calves bring 12 1/2c. to 14c. per lb., live weight, despite the fall in beef; common calves 12c. to 10c.; poorest, 9c. and even lower....**Sheep and Lambs** have far exceeded in supply anywhere previously known here—29,400 per week, against a weekly average last year of 16,000! November 1st, prices were down to 4 1/2c. @6c. per lb., live weight, for sheep. With a little decline in receipts prices are better this week. Those of good quality range at 6c. to 7c., and occasional extras 7 1/2c. to 7 3/4c.; medium to inferior 6c. to 5c. Lambs 6 1/2c. to 8 1/2c., for poor to extra quality....**Live Hogs** have had a great fall in value, partly from the heavy receipts and warm weather, but mainly from the heavy decline in packed pork, hams, and lard, in the commercial market. To-day live hogs are bringing only 7 1/2c. to 8 1/2c. per lb., live weight, against 10 1/2c. @11 1/2c. in our last report, but there is apparently an upward turn in the market.

A Horse Hospital.

Every one who keeps only two horses should be able to separate them if one is sick, and it is hardly the fair thing to turn the well one into the yard. If possible, have a box 10 feet square, 8x10 will do. The floor should be slightly sloping and tight, so that no air currents can draw up through it. Provide a window, good ventilation independent of the window, and a substantial trough which should be movable, and supply a great abundance of clean straw litter. All the sides of the box should be tight, so that the animal will be shielded from blasts of air, and there should be a padlock on the door. This box (and it may be well to have more than one) should be entirely removed from the other stalls. When a horse shows anything ailing him, after thoroughly cleaning, sponging off and rubbing him dry, turn him in here, for such food and treatment as the case demands. Never curry or clean a horse in the loose box, that is able to walk out of it.

(Business Notices \$2.00 per Agate Line of Space.)

THE GREAT AMERICAN TEA COMPANY ALWAYS A WHOLESALE ESTABLISHMENT.

We have many enquiries (10 to 20 letters a day) asking what discount we make to the trade from our prices as published in the PRICE LIST. These are our lowest wholesale prices. We consider ourselves only a Wholesale Corporation, and we have but one price.

The way in which we came to break packages at all, was that during the high prices of Teas we furnished parties with packages as small as five pounds. Our fame spread far and wide; and parties with small means thought it very hard to be compelled to pay, elsewhere, about a dollar per pound more than we were selling the same goods for, simply because they could not afford to buy five pounds of us at one time. Therefore, in order to lighten these burdens, we consented to supply their wants in quantities as small as one pound at the wholesale prices.

Parties of small means wishing for goods to sell, can have their orders put up in small packages to suit their trade, but we cannot make any reduction in price, as our profits for the last six years have not averaged more than two cents per pound.

To give our readers an idea of the profits which have been made in the Tea trade, we will start with the American houses, leaving out of the account entirely the profits of the Chinese factors.

1st.—The American House in China or Japan makes large profits on their sales or shipments—and some of the richest retired merchants in this country have made their immense fortunes through their houses in China.

2d.—The Banker makes large profits upon the foreign exchange used in the purchase of Teas.

3d.—The Importer makes a profit of 30 to 50 per cent. in many cases.

4th.—On its arrival here it is sold by the cargo, and the Purchaser sells it to the Speculator in invoices of 1,000 to 2,000 packages, at an average profit of about 10 per cent.

5th.—The Speculator sells it to the Wholesale Tea Dealer in lines at a profit of 10 to 15 per cent.

6th.—The Wholesale Tea Dealer sells it to the Wholesale Grocer in lots to suit his trade, at a profit of about 10 per cent.

7th.—The Wholesale Grocer sells it to the Retail Dealer at a profit of 15 to 25 per cent.

8th.—The Retailer sells it to the consumer for all the profit he can get.

When you have added to these eight profits as many brokerages, cartages, storages, cooperages, and waste, and add the original cost of the tea, it will be perceived what the consumer has to pay. And now we propose to show why we can sell so very much lower than small dealers.

We propose to do away with all these various profits and brokerages, cartages, storages, cooperages, and waste, with the exception of a small commission paid for purchasing to our correspondents in China and Japan, one cartage, and a small profit to ourselves—which, on our large sales, will amply pay us.

Parties getting their Teas from us may confidently rely upon getting them pure and fresh, as they come direct from the Custom House Stores to our warehouses.

The Company have selected the following kinds from their Stock, which they recommend to meet the wants of Clubs. They are sold at Cargo Prices, the same as the Company sell them in New York, as the List of prices will show.

All goods sold are warranted to give satisfaction.

PRICE LIST:

YOUNG HYSON (Green), 80c., 90c., \$1, \$1.10, best \$1.25 per pound.

GREEN TEAS, 80c., 90c., \$1, \$1.10, best \$1.25 per pound.

MIXED, 70c., 80c., 90c., best \$1 per pound.
JAPAN, \$1, \$1.10, best \$1.25 per pound.
OOLONG (Black), 70c., 80c., 90c., best \$1 per pound.
IMPERIAL (Green), best \$1.25 per pound.
ENGLISH BREAKFAST (Black), 80c., 90c., \$1, \$1.10, best \$1.20 per pound.
GUNPOWDER (Gunpowder), \$1.25, best \$1.50 per lb.

ATLANTA, Ind., Oct. 20, 1866.
To THE GREAT AMERICAN TEA COMPANY,
31 and 33 Vesey Street, New York.

FIFTH ORDER FROM THIS CLUB.			
8 lbs. Young Hyson,	John Feely.....	at \$1.25	\$10.00
8 do do	Wm. Barclay.....	at 1.25	10.00
4 do do	John Bourke.....	at 1.25	5.00
4 do do	P. Dinneen.....	at 1.25	5.00
4 do do	P. Moran.....	at 1.25	5.00
4 do do	Geo. Watson.....	at 1.25	5.00
1 do do	T. Adams.....	at 1.25	5.00
2 do do	Robert Little.....	at 1.25	2.50
2 do do	J. R. Walliser.....	at 1.25	2.50
2 do do	W. Radschmiller.....	at 1.25	2.50
2 do do	Mrs. London.....	at 1.25	2.50
1 do do	J. W. Stokes.....	at 1.25	1.25
1 do do	Robt. Ramsey.....	at 1.25	1.25
1 do Oolong,		at 1.00	1.00
3 do do	F. A. Slater.....	at 1.00	3.00
1 do do	W. Killeen.....	at 1.00	1.00
3 do Gunpowder,		at 1.25	3.75
1 do do	F. A. Slater.....	at 1.25	1.25
3 do do	T. Greenland.....	at 1.25	3.00
1 do do	H. P. Hall.....	at 1.00	3.00
4 do Imperial,	Geo. Hibbert.....	at 1.25	5.00
3 do do	Geo. Giegoldt.....	at 1.25	3.75
3 do do	E. F. Campbell.....	at 1.25	3.75
1 do do	Samuel Sweet.....	at 1.25	1.25

This is the Fifth Order; so you see it suits pretty well.
Yours, etc. E. K. LONG.

P. S.—All towns, villages, or manufactories, where a large number of men are engaged, by clubbing together, can reduce the cost of their Teas and Coffees about one-third by sending directly to the

GREAT AMERICAN TEA COMPANY,
31 and 33 VESSEY-STREET, corner of Church.
Post-Office Box, 5,643 New-York-City.

We call special notice to the fact that our Vesey Street Store is at No. 31 and 33 Vesey Street, corner of Church Street—large double store.

Parties looking for our store will please bear in mind that ours is a large double Store, Nos. 31 and 33 Vesey Street, corner of Church-street. This is an important fact to be remembered, as there are many other Tea Stores in Vesey St.

Herald of Health on Trial.

We will send the Herald of Health 3 months for 25 cents, that all may see how valuable it is, or for the year, \$2.00.
MILLER, WOOD & CO., 15 Laight-street, New York City.

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BY USING**

**B. T. BABBITT'S
STAR YEAST POWDER.**

Light Biscuit or any kind of Cake may be made with this "Yeast Powder" in 15 minutes. No shortening is required when sweet milk is used.

**50 PER-CENT SAVED
BY USING**

**B. T. BABBITT'S
LABOR-SAVING SOAP.**

This Soap is made from clean and pure materials, containing no adulteration of any kind, will not injure the most delicate fabric, and is especially adapted for woollens, which will not shrink after being washed with this Soap. It may be used in hard or salt water. It will remove paint, grease, tar and stains of all kinds. One pound warranted equal to two pounds of ordinary family soap. Directions sent with each bar for making three gallons handsome soft soap from one pound of this Soap. Each bar is wrapped in a circular containing full directions for use, printed in English and German. Ask your grocer for "B. T. Babbitt's Soap," and take no other.

**50 PER-CENT SAVED
BY USING**

**B. T. BABBITT'S
BEST MEDICINAL SALERATUS.**

Bread made with this Saleratus contains, when baked, nothing but common salt, water and flour.

**50 MAKE YOUR OWN SOAP
PER-CENT SAVED BY**

**USING B. T. BABBITT'S
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OR
READY SOAP MAKER.

Warranted double the strength of common Potash, and superior to any other saponifier or ley in the market. Put up in cans of 1 pound, 2 pounds, 3 pounds, 6 pounds, and 12 pounds, with full directions in English and German for making Hard and Soft Soap. One pound will make 15 gallons of Soft Soap. No lime is required. Consumers will find this the cheapest Potash in market.

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